

State of Michigan

**Department of Management and Budget
Facilities Administration**

DCSPEC Bidding and Contract Document

File No. 751/09440.AGY
Index No. 51220
Department of Natural Resources
Parks and Recreation Division

**24-3207 FORT WILKINS STATE PARK -
LAKE FANNIE HOOE – INSTALL FLOATING FISHING PIER
KEWEENAW PENINSULA**

Bid Date: Wednesday, November 18, 2009 at 2:00 p.m., Local Time

MANDATORY PRE-BID MEETING: NONE SCHEDULED

TABLE OF CONTENTS

BID SUMMARY FORM.....Form 1 - 3

DIVISION 00 BIDDING REQUIREMENTS, CONTRACT FORMS, AND CONTRACT CONDITIONS

SECTION	TITLE	PAGES
00010	PRE-BID INFORMATION.....	00-1
00020	GLOSSARY	00-1 TO 00-5
00100	INSTRUCTION TO BIDDERS	00-5 TO 00-8
00120	SUPPLEMENTARY INSTRUCTIONS	00-8
00200	INFORMATION TO BIDDERS.....	00-8 TO 00-9
00700	GENERAL CONDITIONS.....	00-9 TO 00-20
00750	SPECIAL WORKING CONDITIONS.....	00-20
00800	SUPPLEMENTARY CONDITIONS.....	00-20
00850	PREVAILING WAGE RATE DETERMINATION	00-20 TO 00-21
00900	ADDENDA.....	00-21

DIVISION 01 - GENERAL REQUIREMENTS

SECTION	TITLE	PAGES
01010	SUMMARY OF WORK.....	01-1
01020	ALLOWANCES	01-1
01025	MEASUREMENT AND PAYMENT	01-1
01030	ALTERNATES.....	01-1
01040	COORDINATION	01-1 TO 01-2
01050	FIELD ENGINEERING AND LAYOUT.....	01-2
01060	REGULATORY REQUIREMENTS	01-2 TO 01-3
01090	REFERENCES.....	01-4
01100	SPECIAL PROJECT PROCEDURES.....	01-4 TO 01-5
01200	PROJECT MEETINGS	01-5
01300	SUBMITTALS.....	01-5 TO 01-6
01400	QUALITY CONTROL.....	01-6
01500	CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS	01-6 TO 01-7
01600	MATERIAL AND EQUIPMENT	01-7
01650	FACILITY START-UP.....	01-7
01700	CONTRACT CLOSE-OUT	01-8
01800	MAINTENANCE	01-8

DIVISION 02 – SITE WORK

SECTION	TITLE	PAGES
02000	MOBILIZATION.....	1 only
02050	DEMOLITION.....	1 - 2
02200	SOIL EROSION AND SEDIMENTATION CONTROL.....	1 - 4
02300	EARTHWORK.....	1 - 6

DIVISION 02 – SITE WORK, Continued

SECTION	TITLE	PAGES
02481	DREDGING	1- 3
02484	STEEL SHEET PILING	1 - 2
02800	SITE IMPROVEMENTS	1 - 2
02891	FLOATING FISHING PIER	1 - 15
02900	RESTORATION	1 - 2
02920	LAWNS AND GRASSES	1 - 3

DIVISION 03 - CONCRETE

SECTION	TITLE	PAGES
03300	CAST-IN-PLACE CONCRETE SIDEWALK	1 - 5

- APPENDIX I – PREVAILING WAGE RATE SCHEDULE**
- APPENDIX II – SPECIAL PROJECT PROCEDURES**
- APPENDIX III – SPECIAL PROVISIONS**
- APPENDIX IV – CONTRACTOR CERTIFICATION FORMS**

DRAWINGS - BOUND SEPARATELY

TITLE	SHEET NUMBER
Title Sheet	T1
Existing Site/Removals/SESC Plan	C1
Proposed Plan	C2
Floating Pier and Elevations	C3
Floating Pier Railing Details	C4
Floating Pier Gangway/Abutment Details.....	C5
SESC Details	C6

BID SUMMARY

SUBMIT BID TO:

MI DEPARTMENT OF MANAGEMENT AND BUDGET
 FACILITIES ADMINISTRATION
 DESIGN AND CONSTRUCTION DIVISION
 P.O. BOX 30026
 LANSING, MICHIGAN 48909

EXPRESS MAIL TO:

MI DEPARTMENT OF MANAGEMENT AND BUDGET
 FACILITIES ADMINISTRATION
 DESIGN AND CONSTRUCTION DIVISION
 530 WEST ALLEGAN STREET, 2ND FL., STEVENS T. MASON BLDG.
 LANSING, MICHIGAN 48933

FILE NUMBER	INDEX NUMBER	AGENCY OBJ. CODE	PROJECT/PHASE CODE	COMMODITY CODE	AGENCY NUMBERS
751/09440.AGY	51220	6440	291000/26	959-90	24-3207
DEPARTMENT/AGENCY			PROJECT SCOPE OF WORK DESCRIPTION/LOCATION		
NATURAL RESOURCES – PARKS AND RECREATION DIVISION			FORT WILKINS STATE PARK - LAKE FANNIE HOOE - INSTALL FLOATING FISHING PIER		
BID OPENING DATE			FOR AN EXAMINATION OF THE SITE CONTACT:		
WEDNESDAY, NOVEMBER 18, 2009 AT 2:00 P.M., LOCAL TIME			BRUCE WATKINS (571) 373-9833		

NOTE: SEE SECTION 00100 INSTRUCTIONS TO BIDDERS AND SECTION 00700 GENERAL CONDITIONS PROVIDED WITH THE BIDDING DOCUMENTS.
BID: WE PROPOSE TO FURNISH, PERFORM AND COMPLETE THE ENTIRE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS IN CONSIDERATION OF THE BID PRICE (S) STATED BELOW.

FIRM NAME AND COMPLETE ADDRESS		TELEPHONE NUMBER	
		FEDERAL I.D. NUMBER (IF NONE, SOCIAL SECURITY NUMBER)*	
BIDDER'S SIGNATURE AND TITLE	DATE	WITNESS' SIGNATURE	DATE

*Protected information required for processing payments.

Base Bid :Dollars \$ _____
 _____ Dollars

BID GUARANTEE REQUIRED: A BID SECURITY IN THE AMOUNT OF FIVE (5) PERCENT OF THE BASE BID IS REQUIRED FOR ALL BIDS AS SPECIFIED IN THE SECTION 100 INSTRUCTION TO BIDDERS.

BIDDERS ARE ALSO CAUTIONED TO FAMILIARIZE THEMSELVES WITH ALL OF THE OTHER CONDITIONS OF THE CONTRACT AS SET FORTH THROUGHOUT THE GENERAL CONDITIONS PREFACE TEXT.

ADDITIVE ALTERNATES SECTION (reverse side of this Bid Summary Form) IS REQUIRED TO BE COMPLETED OR BID MAY BE REJECTED AS INCOMPLETE.

Project Scope of Work:

PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT TO FURNISH AND INSTALL A FLOATING FISHING PIER, ABUTMENT, GRADING AND SITE WORK, AND RELATED ITEMS AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN AT LAKE FANNIE HOOE, FORT WILKINS STATE PARK, KEWEENAW COUNTY, MICHIGAN.

** Builders Risk Insurance will not be provided by the State of Michigan for this project.

The Bidder must figure its Base Bid on the specified, or Addendum-approved, materials and equipment **only**. No "or equal" or substitution proposals will be permitted after Bid opening, except as provided in the General Conditions.

Contract Substantial Completion Date: **June 11, 2010.**

Addenda: Bidder acknowledges receipt of Addenda:

No. _____ dated: _____, No. _____ dated: _____

ADDITIVE ALTERNATES

SECTION 00460

I. GENERAL

- A. The Base Bid Sum is solicited and the amount is to be inserted by the Bidder in the Blank space provided on the BID SUMMARY FORM. Award of Contract, if made, will be to the Bidder whose Base Proposal Sum is to the best interest of the State. Do Not Alter This Bid Form.
- B. ADDITIVE ALTERNATES Should additional funding become available, the Owner reserves the right to increase the Scope of Work and the payment thereof as described, below. The Alternates to the Scope of Work will be added in the order listed, below.

ADDITIVE ALTERNATE #1:

Add fish habitat bundles to the contract work as shown and specified on the plans.\$ _____
 (Amount to be Added to Base Bid.)

ADDITIVE ALTERNATE #2:

Delete natural wood decking material from gangway and fishing pier and **Add** recycled plastic decking material as specified. Note: Added work to include any required modifications to the pier substructure.\$ _____
 (Amount to be Added to Base Bid.)

ADDITIVE ALTERNATE #3:

Delete 6” and 9” thick reinforced concrete walk and **Add** 6” thick pervious concrete section as shown and specified. **Added** work to include drainage layer materials and associated work. Added work also includes modifying bench, grill, picnic table and upland sign to be embedment type installations. Note: Abutment cap to remain reinforced concrete as shown and specified.\$ _____
 (Amount to be Added to Base Bid.)

II. BASIS OF AWARD OF CONTRACT

- A. Award of contract will be based upon the lowest Base Bid Sum submitted by a responsible and responsive Bidder.
- B. Should funding be available, the Owner reserves the right to award the contract based upon the lowest figure resulting from the Base Bid Sums with their respective Additive Alternate #1 figures applied.
- C. Should funding still be available, the Owner reserves the right to award the contract based upon the lowest figure resulting from the Base Bid Sums with their respective Additive Alternate #1 and Additive Alternate #2 figures applied.
- D. Should available funding not yet be exceeded, the Owner reserves the right to award the contract based upon the lowest figure resulting from the Base Bid Sums with their respective Additive Alternate #1, Additive Alternate #2, and Additive Alternate #3 figures applied.



Company Name: _____

QUALIFICATION STATEMENT

Issued under authority of Act 451, P.A. 1994 as amended.

This Qualification Statement must be completed in order to be considered for bid award and will be used by the Michigan Department of Natural Resources for the purpose of establishing the qualifications of firms for furnishing and installing the fishing pier and associated work at Lake Fannie Hooe, Fort Wilkins State Park, Keweenaw County, Michigan. Only those firms with experience in jobs of similar volume and character needed to perform the task outlined in the attached bid documents will be considered for the project. The Department of Natural Resources will evaluate project references and previous Department experience with the bidders firm in determining if a firm is qualified to execute this work.

INSTRUCTIONS: Describe the most recent job experiences (three minimum) most applicable to the tasks outlined in the Proposal and Contract. Please supply references and telephone numbers.

Reference		Contact Person	Telephone Number
Approximate Dollar Amount \$	Location		
Description			

Reference		Contact Person	Telephone Number
Approximate Dollar Amount \$	Location		
Description			

Reference		Contact Person	Telephone Number
Approximate Dollar Amount \$	Location		
Description			

Is your firm currently pre-qualified with the Michigan Department of Transportation? YES NO

Is your firm a certified Disadvantaged Business Enterprise (DBE) with the Michigan Department of Transportation? YES NO

Submit two copies of this completed Qualification Statement and any additional pages (limit two) together with your proposal. Proposals not accompanied by this Statement will not be considered.

DIVISION 00

BIDDING REQUIREMENTS AND CONTRACT CONDITIONS

SECTION 00010 PRE-BID INFORMATION

1. **Invitation to Bid (ITB)** – Your firm is invited to submit a Bid. The State of Michigan as the **Owner** will receive sealed Bids, delivered to the Department of Management and Budget, Facilities Administration (DMB-FA), First Floor, Stevens T. Mason Building, PO Box 30026, 530 West Allegan Street, Lansing, Michigan 48909, for installing the floating fishing pier and related items until 2:00 P.M., local time, on Wednesday, November 18, 2009, when all Bids duly received will be opened publicly and read aloud. The State reserves the right to cancel this Invitation to Bid (ITB) or change the date and time for submitting Bids by announcing same at any time before the established date and time for Bid opening. Bids must remain open for acceptance by the Owner for no less than the Bid hold period of sixty (60) Calendar Days. Contractor may agree to extend the Bid hold period. However, any such extension must be based upon no increase in the Bid Price and/or Contract Time.

2. **Work Description** – The Work, Fort Wilkins State Park – Lake Fannie Hooe – Install Floating Fishing Pier, Agency No. 24-3207, Index No. 51220, DMB File No. 751/09440.AGY, which includes, but is not necessarily limited to:

PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT TO FURNISH AND INSTALL A FLOATING FISHING PIER, ABUTMENT, GRADING AND SITE WORK, AND RELATED ITEMS AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN AT LAKE FANNIE HOE, FORT WILKINS STATE PARK, KEWEENAW COUNTY, MICHIGAN.

3. **Bidding Documents** – Sets of Bidding Documents may be obtained at no charge from the Department of Natural Resources, Office of Land and Facilities, P.O. Box 30033, Lansing, Michigan 48909 or Stevens T. Mason Bldg., 8th Fl., 530 West Allegan Street, Lansing, Michigan 48933, telephone: (517) 373-9902; fax: (517) 241-4278.

4. **Bid Security** – Each Bid must enclose Bid Security, in the amount of five percent (5%) of the Bidder's Base Bid, paid to the "State of Michigan" in the form of a certified or cashier's check or money order drawn upon a bank insured by an agency of the Federal Government or a bid bond with an authorized surety company.

5. **Pre-Bid Conference** – A pre-bid conference has not been scheduled for this project.

6. **Equal Employment Opportunity** – Covenants to not discriminate in employment by Contractors, Subcontractors and Suppliers required by Law are contained in Instructions to Bidders and General Conditions and are applicable to the Work and any Sub-agreement under the Contract.

7. **Contract Complete Date and Work Schedule Times** – The Contract Completion Date and Work Schedule Times and the associated liquidated damages are specified in the Contract.

8. **Contact Person** – All requests or inquiries concerning the Bidding Documents or the Work must be addressed to: Bruce Watkins, (517) 373-9833.

9. **Award of Contract**– Subject to any agreed extension of the period for holding Bids, Bids must remain valid for acceptance by the Owner for 60 Calendar Days after the date of Bid Opening. In addition, the Owner expressly reserves the right, within the Owner's sole discretion, to reject any or all Bids, to waive any irregularities, to issue post-Bid Addenda and re-bid the Work without re-advertising, to re-advertise for Bids, to withhold the award for any reason the Owner determines and/or to take any other appropriate action.

SECTION 00020 GLOSSARY

Activity–An element in the Progress Schedule establishing a requisite step, or the time and resources required, for completing the part of the Work associated with that Activity.

Addenda–Written instruments that are used by the Owner or its authorized representative to incorporate interpretations or clarifications, modifications and other information into the Bidding Documents. An Addendum issued after Bid opening to those Bidders who actually submitted a Bid, for the purpose of re-bidding the Work without re-advertising, is referred to as a **post-Bid Addendum**.

Agency- Any unit, section, division, department or other instrumentality of the State that benefits from the Work.

Alternate–Refers to work specified in the Bidding Documents for which the Bidder must bid an Bid Price.

Apparent Low Bidder–That Bidder who's Base Bid, when added to those specific Alternates the Owner intends to accept, yields the lowest sum of Base Bid and Alternates.

Archaeological Feature–Any prehistoric or historic deposit of archaeological value, as determined by a representative of a State agency that is duly authorized to evaluate such findings and render such judgments. An Archaeological Feature deposit may include, but is not limited to Indian habitations, ceremonial sites, abandoned settlements, treasure trove, artifacts or other objects with intrinsic archaeological value and that relate to the history and culture of the State of Michigan. The Archaeological Features are listed under Section 00800 Supplementary Conditions.

Authorized Technical Data—Information and data contained in a report of exploration and tests of subsurface conditions. Also, any physical data (dimension, location, conditions, etc.) contained in those Drawings of physical conditions of existing surface and subsurface facilities.

Bar Chart Schedule—Activity schedule, in a bar chart format, that accounts for the entire Work at a level of detail commensurate with the Progress Schedule requirements of the Contract Documents.

Bid—Written offer by a Bidder for the Work, as specified, which designates the Bidder's Base Bid and Bid Prices for all Alternates. The term *Bid* includes a *re-bid*.

Bidder—The Person acting directly, or through an authorized representative, who submits a Bid directly to the **Owner**.

Bidding Documents—The proposed Contract Documents as advertised, and all Addenda issued before execution of the Contract.

Bid Price—The Bidder's price for a lump sum item of work, or the product of the Bidder's unit price for an item of Unit Price Work multiplied by the quantity given on the Bid Form for that item.

Bid Security—Security serving as a guarantee that the Bidder will conform to all conditions.

Bidding Requirements—The Advertisement, Instructions to Bidders, Supplementary Instructions, Information for Bidders, Bid Form, Bid Form Attachments and qualification submittals, as advertised and as modified by Addenda, and any other Section included within Division 0 of the Bidding Documents for the purpose of governing bidding and award of the Contract. These comprise the essential terms and conditions for fulfillment of the contract. Other terms and conditions may also apply to any included technical specifications.

Board—The Administrative Board of the State of Michigan.

Bond—Security furnished by the **Contractor**, as required by the Contract Documents.

Business Day—Any Day except Saturdays, Sundays and holidays observed by the **Owner**.

Bulletin—A request used by the **Owner** to describe a change in the Work under consideration by the **Owner** and to request the **Contractor** to submit a proposal for the corresponding adjustment in Contract Price and/or Contract Time, if any.

Calendar Day—Every day shown on the calendar, Saturdays, Sundays and holidays included.

Cash Allowance—An **Owner**-specified sum included within the Contract Price to reimburse the **Contractor** for the actual purchase/furnished cost of materials and/or equipment or other designated items, as specifically provided in the Contract Documents. Although the scope (e.g., the required quantity) of any Work covered by a Cash Allowance is sufficiently detailed in the Contract Documents for the purposes of bidding the required labor costs, Subcontract costs, construction equipment costs and general conditions costs and Fee, it is understood that the required materials, equipment or other designated items are of uncertain purchase cost at the time of Bid or are yet to be specified in more detail by the **Professional** as to quality, appearance, durability, finish and such other necessary features affecting purchase price.

Change Order—A written order issued and signed by the **Owner**, which amends the Contract Documents for changes in the Work or an adjustment in Contract Price and/or Contract Time, or both.

Contract Award—The official action of the **Board** or the **Director-FA** awarding the Contract to the **Contractor**.

Contract Documents—Written and graphic documents that form the legal agreement between the **Owner** and the **Contractor**, consisting of this document, completed Bid and Contract forms, terms and conditions of the contract, specifications, drawings, addenda, Notice of Award, Notice-to-Proceed and contract change orders.

Contract Price—The total compensation, including authorized adjustments, payable by the **Owner** to the **Contractor** (subject to provisions for Unit Price Work).

Contract Times—The Contract Times for the entire Work are the periods allowed, including authorized adjustments, for Substantial Completion and final completion of the Work. The Contract Times for a designated portion of the Work are the periods allowed for Substantial Completion and final completion of any such portion of the Work, as specified in the Contract Documents.

Contractor—Business enterprise with which the **Owner** has entered into the Contract.

Correction Period—Period during which the **Contractor** must, in accordance with the Contract Documents, (a) correct or, if rejected, remove and replace Defective Work, and (b) maintain warranties for materials and equipment in full force and effect.

Cost of the Work Involved—The sum of all costs that would be, or actually were, necessarily incurred by the **Contractor** in providing any Work Involved with the related change, less the costs that would be, or would have been, incurred by the **Contractor** to provide such Work without the related change.

Defective—As determined by the Professional, an adjective which when referring to or when applied to the term “Work” refers to (a) Work not conforming to the Contract Documents or not meeting the requirements of an inspection, test or approval, or (b) Work itemized in a Punch List which the **Contractor** fails to complete or correct within a reasonable time after issuance of the Punch List by the **Professional**.

Delay—Any act or omission or other event that in any manner adversely affects or alters the schedule, progress or completion of all or any part of the Work. Delay is a generic term intended to include deferral, stoppage, slow down, interruption and extended performance, and all related hindrance, rescheduling, disruption, interference, inefficiency and productivity and production losses.

Department (DMB)—Department of Management and Budget of the State of Michigan.

Director is the Director of the **Department**.

Director-FA is the Director of **DMB** Facilities Administration.

Division—Each of the numbered, distinct parts (starting with Division 0) into which the Specifications are divided.

Drawings—Part of the Contract Documents showing the Work. Drawings must neither serve nor be used as Shop Drawings.

Emergency—A condition affecting the safety or protection of persons, or the Work, or property at or adjacent to the site.

Facilities Administration—Entity in the **Department** responsible for design, construction, and operations and maintenance of facilities.

Fee for the Work Involved (Fee)—An established, percentage mark-up on the Cost of the Work Involved which is allowed to the **Contractor** for (a) reasonable administrative costs, and (b) negotiated, reasonable profit on the Cost of the Work Involved.

Hazardous Material—Asbestos containing materials (ACMs), Polychlorinated biphenyls (PCBs), petroleum products, such construction materials as paint thinners, solvents, gasoline, oil, etc., and any other like material the manufacture, use, treatment, storage, transportation or disposal of which is regulated by federal, State or local Laws governing the protection of public health, natural resources or the environment.

Invitation To Bid (ITB) -The solicitation document presenting the terms and conditions that will become part of the Contract when the Bid is accepted.

Law(s)—Means federal, State and local statutes, ordinances, orders, rules and/or regulations.

MCL—The Michigan Compiled Laws of the State of Michigan.

Means and Methods—Includes means, methods, techniques, sequences and/or procedures applicable to the Work.

Notice of Award—Written notice accepting the Bid to the lowest responsive, responsible Bidder and designating the Contract Price (and establishing the Alternates accepted by the **Owner**).

Notice-to-Proceed—Written notice issued by the Project Director directing the Contractor to commence the construction activities and establishing the start date of the Contract Time.

On-Site Inspection—The **Professional's** on-site examination of the **Contractor's** completed or in progress Work to determine and verify to the Project Director that the quantity and quality of all Work complies with the requirements of the Contract Documents.

Owner—The State of Michigan, with whom the **Contractor** has entered into the Contract and for whom the Work is to be provided.

Owner Field Representative—A State employee or consultant, acting under the direction of the Project Director, providing on-site, periodic observation and documentation of the Work for compliance with the Contract Documents.

Partial Use—Use by the **Owner** of a designated portion of the Work before accomplishing Substantial Completion of the entire Work. Partial Use does not mean Substantial Completion of the portion of the Work placed in use by the **Owner**.

Person—Individuals, partnerships, corporations, receivers, trustees, joint ventures or any other legal entity and any combinations of any of them.

Political Subdivision—Any county, city, village or other local unit of the State, including any agency, department or instrumentality of any such county, city, village or other local unit.

Pre-Award Schedule—A Qualification Submittal required of the Apparent Low Bidder before Contract Award, and which is used by the **Owner** in the evaluation of the Apparent Low Bidder's Bid.

Professional Services Contractor (PSC or Professional)—The individual or business entity who has the authority to practice the disciplines required by the Contract Documents. An Agency with appropriate licensing may replace the PSC in their role if a consultant is not used.

Progress Schedule—Work Schedule that shows the **Contractor's** approach to planning, scheduling and execution of the Work and that accurately portrays completed Work as to sequencing and timing, as provided in the Contract Documents.

Project—The total construction, which includes the Work and possibly other work completed by others, as indicated in the Contract Documents.

Project Director—Designated State employee(s) (a) Responsible for directing and supervising the **Professional's** services during the period allowed for completion of the Work; and/or (b) Acting as representative for the **Owner** and for the enforcement of the Contract Documents, approving payment to the **Contractor** and coordinating the activities of the State, **Owner, Professional and Contractor**.

Project Manual—The Book of Specifications, containing Division 0 of the Specifications and the technical Specifications.

Provisionary Allowance—An amount included within the Contract Price to reimburse the **Contractor** for the cost to furnish and perform Work that is uncertain because, for example, it is indeterminate in scope and may not be shown or detailed in the Contract Documents.

Punch List—A list of minor items to be completed or corrected by the **Contractor**, any one of which do not materially impair the use of the Work for its intended purpose.

Record Documents—Drawings, Specifications, Addenda, Change Orders, Change Authorizations, Bulletins, inspection, test and approval reports, photographs, written clarifications and interpretations and all other documents recording, or annotated to show, all revisions and deviations between the as-built installation and the Contract Documents, all approved Submittals and all clarifications and interpretations.

Records—Books, reports, documents, electronic data, and other evidence relating to the bidding, award and furnishing and performance of the Work.

Recycled Material—Recycled paper products, structural materials made from recycled plastics, re-refined lubricating oils, reclaimed solvents, recycled asphalt and concrete, recycled glass products, re-treaded tires, ferrous metals containing recycled scrap metals and all other materials that contain (a) waste materials generated by a business or consumer, (b) materials that have served their intended purpose, and/or (c) materials that have been separated from solid waste for collection, recycling and disposition in the percentage determined by the State as provided by Law.

Request for Payment—The form provided by the **Owner** (Payment Request DMB-440) to be used by the **Contractor** in requesting payment for Work completed, which must enclose all supporting information required by the Contract Documents.

Schedule of Values—A schedule of pay items, which subdivides the Work into its various parts and which details, for each itemized part, cost and pricing information required for making payments for Work performed. The sum of all pay item costs in the Schedule of Values must equal the Contract Price for the Work.

Shop Drawings—Includes drawings, diagrams, illustrations, standard schedules, performance charts, instructions and other data prepared by or for the **Contractor** to illustrate some part of the Work, or by a Supplier and submitted by the **Contractor** to illustrate items of material or equipment.

Soil Erosion and Sedimentation Control—The planning, design and installation of appropriate Best Management Practices designed and engineered specifically to reduce or eliminate the off-site migration of soils via water runoff, wind, vehicle tracking, etc. Soil erosion and sedimentation control in the State of Michigan is regulated under The Natural Resources Environmental Protection Act; Soil Erosion and Sedimentation Control, 1994 PA 451, Part 91, as amended, MCL 324.9101 et seq. Soil erosion and sedimentation control associated with this Contract is monitored and enforced by the DMB-FA.

Specifications—Parts of the Contract Documents organized into Divisions. "Technical Specifications" means Divisions of the Specifications consisting of technical descriptions of materials, equipment, construction systems, standards and workmanship.

State—The State of Michigan in its governmental capacity, including its departments, divisions, agencies, boards, offices, commissions, officers, employees and agents. Non-capitalized references to a state refer to a state other than the State of Michigan.

State Construction Code—The Michigan State Construction Code Act, 1972 PA 230, as amended, MCL 125.1501 et seq.

Subcontractor—A Person having an agreement with the Contractor to provide labor at the site and furnishing materials and/or equipment for incorporation into the Work.

Submittals—Includes technical Submittals, Progress Schedules and those other documents required for submission by the Contract Documents. The term "technical Submittal" includes Shop Drawings, brochures, samples, Operation and Maintenance (O&M) Manuals, test procedures and any other Submittal the Contract Documents require the **Contractor** to submit to demonstrate how the items covered, after installation or incorporation into the Work, will conform to the information given in the Contract Documents and be compatible with the design of the completed Work as a functioning whole as indicated in the Contract Documents.

Substantial Completion—The Work, or a portion of the Work designated in the Contract Documents as eligible for separate Substantial Completion, has been completed in accordance with the Contract Documents as determined by the PSC, to the extent that the **Owner** can use

or occupy the entire Work, or the designated portion of the Work, for the use intended without any outstanding, concurrent Work at the site, except as may be required to complete or correct Punch List items.

Supplier—A manufacturer or fabricator, or a distributor, material man or vendor representing a manufacturer or fabricator, who has an agreement with the Contractor to furnish materials and/or equipment.

Underground Utilities—Pipelines, piping, conduit, duct, cables, wells, tanks, tunnels and appurtenances, or other similar facilities, installed underground to convey or support conveyance of potable water, sprinkler or irrigation water, fire protection systems, electricity, gases, steam, petroleum products, sewerage and drainage removal, telephone, communications, cable TV, traffic or control systems.

Unit Price Work—Work involving specified quantities (i.e., related Work quantities) which when performed is measured by the **Professional** and paid using the measured quantities and unit prices contained in the Contract Documents. Performance of Unit Price Work for undefined quantities is contingent upon conditions encountered at the site, as determined and authorized by the **Professional**.

Unit Price Work, Specified—Work of specified and defined quantities (i.e., quantities are detailed in, and can be taken-off from, the Contract Documents) that when performed is measured by the **Professional** and paid based on the measured quantities and unit prices contained in the Contract Documents.

Work (as in “the Work,” “the entire Work”)—The entire *completed Construction* required by the Contract Documents. The Work results from furnishing and performing all services, obligations, responsibilities, management, supervision, labor, materials, equipment, construction equipment, general conditions, permits, taxes, patent fees and royalties, testing, inspection and approval responsibilities, warranties, temporary facilities, small tools, field supplies, Bonds, insurance, mobilization, close-out, overhead and all connections, devices and incidental items of any kind or nature required and/or made necessary by the Contract Documents.

Work Involved, any Work Involved—Existing or prospective Work (a) reflected in any notice, proposal or claim, or (b) reflected in changes ordered or in process, or (c) affected by Delay.

SECTION 00100 INSTRUCTION TO BIDDERS

1. **PREPARATION OF BID:** Execute Bid fully and properly. Submit two copies of Bid Summary Form (DMB-401) in a sealed envelope to the Facilities Administration, Design and Construction Division before the opening time when Bids will be publicly opened and read aloud. On the outside of the envelope, identify: i) the Project by name, file number, index number and location; ii) Bidder's name, complete address and phone number; and iii) type of work bid (general, mechanical, ... etc.)

2. **BID CONTENTS:** Bid Form and Bid Form Attachments must be used and completely filled out to be a valid Bid. All Bid prices must be printed or typed in both words and figures. The Bid will consist of the following forms, which are included in the attached Appendices:

<u>Bids</u>	<u>Forms to be submitted</u>
All:	two copies of signed Bid Summary Form (DMB-401); Bid Security in the amount of 5% of Base Bid Price; Signature Authorization or copy of the partnership agreement if signed by all partners; Payment and Performance Bond (upon issuing the Notice of Award).

If Bid is Over \$100K: Copy of valid Certificate of Awardability;

3. **CERTIFICATE OF AWARABILITY:** The Contractor must not discriminate on the basis of religion, race, color, national origin, age, sex, marital status, height, weight, arrest record or disability. All Bidders submitting Bids of \$100,000.00 or more must be certified by the Department of Civil Rights for compliance with State of Michigan Equal Employment Opportunity requirements before submission of Bids. A copy of the Bidder's valid certificate of compliance or awardability must be submitted with the proposal. Failure to enclose the certificate with the proposal will not disqualify the Bidder if a valid certificate exists at the time of Bid Opening and the Bidder submits it within 24 hours after the Bid Opening.

The time required by the Department of Civil Rights to process applications varies as a function of the Department's total workload, which changes from time to time. The Bidder is responsible for securing all pertinent information from the Department of Civil Rights before submitting a bid. Communications should be directed to:

Michigan Department of Civil Rights
Contract Compliance Team
Cadillac Place Building, (Former General Motors Building)
3054 West Grand Boulevard., Suite 3-600
Detroit, Michigan 48202
Telephone: (313) 456-3822 or 456-3823

4. **MICHIGAN PREFERENCE CERTIFICATION:** All Bidders submitting Bids in excess of \$100,000.00 must complete the Preference Certification Form in Appendix III - Forms. This information will determine if a Bidder qualifies as a "Michigan" business for purposes of application of in-State preference considerations where applicable.

5. **QUALIFICATIONS OF BIDDERS/ABILITY TO PERFORM:** The apparent Low Bidder must submit to the Professional, within **three** Business Days after receipt of the Professional's request, a list of the Subcontractors and a Bar Chart Schedule. The schedule must show sequence of the Work Activities with percentages of completion. Failure to provide the submittals may disqualify the Bid.
6. **SIGNATURES:** All Bids, notifications, claims, and statements must be signed as follows:
 - (a) **Corporations:** Signature of official must be accompanied by a certified copy of the Resolution of the Board of Directors authorizing the individual signing to bind the corporation.
 - (b) **Partnerships:** Signature of one partner must be accompanied by a signed copy of the legal document (e.g. Power of Attorney or partnering agreement) authorizing the individual signing to bind all partners. If Bid is signed by all partners, no authorization is required.
 - (c) **Individual:** No authorization is needed. Each signature must be witnessed.
7. **BID PRICES:** The Bidder's Base Bid and Alternate Bid prices must include, and payment for completed Work will-compensate in full for: all services, obligations, responsibilities, management, supervision, labor, materials, devices, equipment, construction equipment, general conditions, permits, patent fees and royalties, testing, inspection and approval responsibilities, warranties, temporary facilities, small tools, supplies, Bonds, insurance, taxes, mobilization, close-out, overhead and profit and all connections, appurtenances and any other incidental items of any kind or nature, as are necessary to complete the Work, in a neat, first quality, workmanlike and satisfactory manner in accordance with the Drawings and Specifications and as otherwise required to fulfill the requirements of the Bidding Documents. For each Cash Allowance item, the Bidder must include, within the Bid, all labor costs, construction equipment costs, insurance and Bond premiums and other general conditions costs and Fees (Bidder's and Subcontractors') to complete Work associated with the material, equipment or other designated item to be furnished under the Cash Allowance. For each Provisionary Allowance, the Bidder must include, within the Bid, insurance, premiums (not recoverable as labor burden) and Bond premiums required to complete Work that may be ordered under Provisionary Allowance.
8. **INSPECTION OF BIDDING DOCUMENTS AND SITE CONDITIONS:** The Bidder must carefully review and inspect all documents referenced and made part of this ITB, site conditions, all applicable statutes, regulations, ordinances and resolutions addressing or relating to the goods and services under this contract. Failure to do so or failure to acquire clarifications and answers to any discovered conflicts, ambiguities, errors or omissions in the Bidding Documents will be at the Bidder's sole risk.
9. **SAFETY REQUIREMENTS AND LAWS:** The Bidder awarded the Contract must comply with all applicable federal, state and local Laws including health and safety regulations, environmental protection, permits and licensing.
10. **INTERPRETATIONS AND ALTERATIONS TO THE BID AND BIDDING DOCUMENTS:** All requests for clarification or interpretation of the Bidding Documents, all proposals for any modifications to the Bidding Documents, all requests for information and all other questions or inquiries about the Bidding Documents and/or the Work shall be submitted in writing to the Contact Person identified in the Bid Documents. Requests or inquiries received less than nine (9) Calendar Days before the date of Bid opening will be answered only if (a) the response can be given through Addenda made available at least seventy-two hours before Bid opening (counting Business Days only), (b) the Bid opening is postponed by Addendum, or (c) the Work is re-bid without re-advertising following the issuance of post-Bid Addenda.

Bidders must not rely upon any oral statements or conversations regarding interpretations, clarifications, corrections, additions, deletions or other revisions or information to the Bidding Documents. Any addition, limitation or provision made with or attached to the Bid may render it non-responsive and/or irregular and be a cause for rejection. The Owner reserves the right to issue a post-Bid Addenda after opening the Bids and set a new date for the receipt and opening of sealed Bids. The Bidder acknowledges that any quantities of Unit Price Work given in this ITB are approximate only and payments will be made only for actual quantities of Unit Price Work completed in accordance with the Contract Documents.
11. **MODIFICATION OF RECEIVED BID:** A modification of a Bid already received will be considered only if the modification is submitted in writing in the Bid form(s) and received before the Bid opening time and date. Modifications may be submitted by a fax to **(517) 373-3562**.
12. **BID WITHDRAWAL:** Except for timely filed claims of mathematical or clerical errors granted by the State, no Bid may be withdrawn within sixty (60) Calendar Days after the Bid Opening time and date or before the Bid expiration date without forfeiting Bid security. The request to withdraw a Bid due to error must be submitted in writing along with the supporting documents within two Business Days after the date of Bid Opening. The claim must describe in detail the error(s), include a signed affidavit stating the facts of the alleged error(s) and request that the Bidder be released from its Bid. The review of the claim and its supporting documents by the State is only for the purpose of evaluating the Bidder's request and must not create duty or liability on the State to discover any other Bid error or mistake. The sole liability of any Bid error or mistake rests with Bidder.
13. **BID OPENING; OBJECTION TO THE AWARD:** Bids will be opened and publicly read at the opening time and date. A Bidder may file a written protest with the Director-FA to object to the Apparent Low Bidder. This objection must be filed within seven Calendar Days after the date of Bid opening and must describe in detail the basis for the protest and request a determination. The Director-FA will either dismiss or uphold the protest and notify the protestor within ten Calendar Days after receipt of the written protest.
14. **BID IRREGULARITIES:** The following irregularities on any Bid Form or Bid Form Attachment must be resolved as follows:
 - (a) between words and figures, the words must be used;
 - (b) between any sum, computed by the Bidder, and the correct sum, the correct sum must be used;

- (c) between the product, computed by the Bidder, of any quantity and Bid Unit Price and the correct product of the Unit Price and the quantity of Unit Price Work, the correct product must be used;
 - (d) between a stipulated Allowance and the amount entered, the Allowance must be used;
 - (e) any mobilization pay item exceeding the maximum specified must be ignored and the Bid must remain unchanged;
 - (f) if any Bidder fails or neglects to bid a Unit Price for an item of Unit Price Work but shows a "Bid Price" for that item, the missing unit price must be computed from the respective quantity and the Item Bid Price shown;
 - (g) if any Bidder fails or neglects to show a "Bid Price" for an item of Unit Price Work but bids a unit price, the missing Bid Price shall be the product of the Unit price and the quantity of the Unit Price Work, and
 - (h) if any Bidder fails or neglects to enter a Bid Price in both words and figures, the Bid Price printed or typed, whether in words or figures, must be used.
- 15. BID GUARANTEE:** Each proposal must be accompanied by either a bank certified or cashier's check on an open, solvent bank or a bid bond with an authorized surety company (the surety must be listed on the current U.S. Department of the Treasury Circular 570) in the amount of five percent of the base bid payable to the State of Michigan, as a guarantee of good faith. If the successful Bidder fails to furnish satisfactory bonds and insurance within fifteen Calendar Days after Notice of Award, such guarantee must be forfeited to the State as liquidated damages. The bid security, exclusive of bid bonds, of all unsuccessful Bidders will be returned when an award is made or upon substitution of a bid bond. The bid security of the successful Bidder will be returned when the performance bond and labor and material bond are approved.
- 16. REJECTION OF BID:** The Bidder acknowledges the right of the Owner to reject any Bids and to waive any informality, defects or irregularity in any Bid received. In addition, the Bidder recognizes the right of the Owner to reject a Bid if:
- (a) the Bid is in any way incomplete or irregular;
 - (b) the Bidder, Subcontractor or Supplier is not responsible as determined by the Owner;
 - (c) the Bidder's performance as a Contractor was unsatisfactory under a prior Contract with the Owner for the construction, repair, modification or demolition of a facility with the Owner, or under any other Contract, which was funded, directly or indirectly, by the Owner;
 - (d) there are reasonable grounds for believing that collusion or unlawful agreements exists between any Bidders, that a Bidder is interested in more than one Bid, or that the Bid is not genuine;
 - (e) the Bid exceeds the funds available; or
 - (f) the Bidder does not have a valid Certificate of Awardability, when required.
- 17. FEDERAL IDENTIFICATION NUMBER:** If you are bidding a State job for the first time, you should verify that your federal identification number or social security number is in the State's master system. Failure to verify that this information exists will delay any payments to you. This number is required before any payments can be processed. You can verify your number or be put into the system by contacting the following:
- State of Michigan
Office of Financial Management
Payee Registration
P.O. Box 30026
Lansing, Michigan 48909
Telephone (888) 734-9749
Local (517) 373-4111
Fax (517) 373-6458
www.michigan.gov/doingbusiness
(Selling to the State) & (How to Register as a Vendor)
- 18. MATERIALS AND EQUIPMENT:** Any Bidder wishing to use manufacturers or materials other than those specified must submit a written request to the Professional not later than nine (9) calendar days before due date for Bids. Request must be accompanied by product data to permit evaluation and comparison with specified products or materials. The Person submitting the request will be responsible for its prompt delivery. The Professional and the Owner will examine and evaluate the product data and if found acceptable, an Addendum will be issued and mailed or delivered to each Person who has received a set of Drawings and Specifications. All Addenda issued must be made a part of the Contract requirements. Contractor will be responsible for any extra work and expense incurred to satisfactorily and completely incorporating each substitute product into the Project.
- 19. MICHIGAN PRODUCTS AND RECYCLED PRODUCTS:** All Contractors and Suppliers are encouraged to provide Michigan-made products and/or recycled products and/or green products and/or environmentally-friendly products whenever possible where price, quality, and performance are equal to, or superior to, non-Michigan products and the requirements of the Contract Documents. The Contractor will be required to use alternatives to landfills for waste disposal such as reuse or recycle of asphalt, bricks, concrete, masonry, plastics, paint, glass, carpet, metals, wood, drywall, insulation and any other waste materials to the extent practical.
- 20. PRE-AWARD SUBMITTALS:** Pre-award submittals are not required for this project.
- 21. CONTRACT AND CONTRACT AWARD:** The Owner intends to award a Contract to the lowest responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents, and does not exceed the funds available. The lowest Bid will be based solely, upon the Base Bid and any the Deductive Alternates the Owner accepts as listed on the Bid Summary Form. The Owner will accept an Alternate only if all other previously listed Alternates are also accepted. The Contractor will be required to submit applicable bonds and insurance. Upon acceptance by the State, this document will constitute the Contract and the executed duplicate will

be returned to the Contractor. The Contract, however, is not in force “executed” until the Contractor has complied with all of the requirements of insurance and bonds.

- 22. CONTRACT SUBSTANTIAL COMPLETION DATE AND LIQUIDATED DAMAGES:** Work of all trades as specified in the Contract Documents must be completed by the end of the working day, **Friday, June 11, 2010**, except for minor replacement, correction, or adjustment items which do not interfere with the complete operation and utilization of all parts of the Contract Work. This Contract Substantial Completion Date is of the essence and liquidated damages for each Calendar Day that expires after this Substantial Completion of the entire Work must be in the amount of **\$450.00**. Liquidated damages are not a penalty, are cumulative and represent a reasonable estimate of the Owner’s extra costs and damages, which are difficult to estimate with accuracy in advance.
- 23. MOBILIZATION:** If used in the Specifications/Bid schedule, all the up-front costs incurred by the Contractor must be covered by the mobilization. The costs to establish temporary site offices, to obtain required permits for commencing the Work and for bonds and insurance premiums are examples of costs to the Contractor that are covered by mobilization pay item.
- 24. SOIL EROSION AND SEDIMENTATION CONTROL:** All Work under this Contract must meet the storm water management requirements of the Project and comply with the applicable Soil Erosion and Sedimentation Control (SESC) rules and regulations and specific provisions for same within the Contract Documents. SESC measures will be monitored and enforced by the Facilities Administration, or another authorized enforcing agency if so delegated, through the review of the Contractor’s implementation plans and site inspections. Facilities Administration or the Professional will notify the Contractor in writing of any violation(s) of the applicable SESC statutes and/or the corrective action(s) undertaken by the Owner and may issue stop work orders. Facilities Administration has the right to assess a fine to the Contractor for noncompliance with the provisions of the Contract Documents and/or SESC regulations applicable to this Work and fines must be in addition to any other remediation costs or liquidated damages applicable to the Project and may exceed the value of the Contract.

SECTION 00120 SUPPLEMENTARY INSTRUCTIONS

The provisions of this Section amend or supplement Section 00100 Instructions to Bidders and those other provisions of the Bidding Requirements that are indicated below. All other Bidding Requirements that are not so amended or supplemented remain in full force and effect.

SECTION 00200 INFORMATION TO BIDDERS

Your proposal must be received on or before the Bid opening date and the time stated in the Bidding Documents. NOTE: Some express mail services guarantee delivery by 3:00 p.m. However, your Bid **WILL NOT BE ACCEPTED IF NOT** received at Facilities Administration by the 2:00 p.m. time required. The properly delivered bid is the sole responsibility of the Bidder. Before sealing the envelope, check to be sure that:

1. The Bid Summary and the proposal forms are signed.
2. The Base Bid and Deductive Alternate #1 is filled in.
3. Bid security is signed by the Bidder and the surety company and included.
4. All Addenda received are acknowledged.
5. Signature authorization is included.
6. Certificate of Awardability is enclosed (if required).

1. UNDERGROUND UTILITIES

Information or data about physical conditions of existing Underground Utilities, which have been used by the Professional in preparing the Bidding Documents, is shown or indicated in the Drawings and technical specifications. However, it is the contractor’s responsibility to verify locations of Underground Utilities which may or may not be indicated on the drawings by calling “Miss Dig”. Three full working days before you dig, call the MISS DIG System at 800-482-7171 or 811. The new 811 number is a national “Call Before You Dig” phone number designated by the Federal Communications Commission (FCC) to eliminate the confusion of multiple “Call Before You Dig” numbers.

The MISS DIG System member utilities will mark the approximate location of their underground public utility lines at no charge. MISS DIG System, Inc. DOES NOT MARK!

The contractor proceeds with the commencement of the Work at his/her own risk.

2. ROYALTIES, PATENTS, NOTICES, AND FEES:

2.01 Contractor shall give all notices and pay all royalties, building permits, and fees. He/she shall defend all suits or claims for infringement of any patent rights and shall save the state harmless from loss on account thereof. He/she shall comply with all laws, ordinances, and codes applicable to any portion of the work.

3. SEQUENCING REQUIREMENTS

Refer to the technical Specifications, including, but not limited to the General Requirements, for information, data and criteria on sequences of Work restraints, construction and maintenance of service to existing facilities.

3.01 Project Coordination:

- 3.01.01 Prior to beginning Work the Contractor shall meet with the Professional and State Unit and arrange the schedule for the project. Once the project is started, it shall be carried to completion without delay.
- 3.01.02 Phasing of Work shall be clearly established and verified with the Professional and State Unit prior to commencing Work in any area. No cutting or removal Work shall begin until authorized by the Professional.
- 3.01.03 Any building utility service interruptions or outages required by the Contractor in performing the Work shall be prearranged with the staff of the State Unit and shall occur only during those scheduled times.
- 3.01.04 Any room furnishings to be removed will be done by State Unit personnel.

3.02 Cutting and Patching

- 3.02.01 The contractor shall do all cutting, fitting or patching of the Work that may be required to make its several parts fit together properly or make new Work join with the existing structure. The Contractor shall take proper precautions so as not to endanger any existing Work. The Contractor shall not cut or alter existing structural members or foundations.
- 3.02.02 Holes or openings cut in exterior walls and roofs for installation of materials or equipment shall be waterproofed by appropriate, approved materials and methods.
- 3.02.03 All adjacent finished surfaces that are damaged by the new Work shall be patched with materials matching existing surfaces. Joints between patched and existing material shall be straight, smooth and flush. All patching material shall be applied by workers skilled in its installation.

Each Bidder must be responsible for any conclusions or interpretations he/she makes related to the selection of sequences and Means and Methods, based on the technical data made available, and/or those additional investigations or studies made or obtained by that Bidder.

4. SUBSURFACE CONDITIONS - Not Applicable To This Project.

5. OTHER PHYSICAL CONDITIONS

The Drawings and technical Specifications contain information or data that have been used in the preparation of the Bidding Documents, and that may be properly considered Authorized Technical Data concerning existing physical conditions and copies are available from the Department of Natural Resources, Office of Land and Facilities.

SECTION 00700 GENERAL CONDITIONS

- 1. **Interpretations:** Any requests for clarifications or interpretations of the Contract Documents must be in writing to the Professional, who will issue written clarifications or interpretations as appropriate. If the Contractor believes that such clarification or interpretation justifies an adjustment to the Contract Price/Time, the Contractor must promptly notify the Professional in writing before proceeding with the Work Involved.
 - 1.01 **Standards:** The Contract Documents describe the entire Work. The provisions of the Contract Documents must govern over any standard specifications, manual or code of any technical society, organization or association but, if lower than the standards set by any Law applicable to the Work or the Project, the higher standards must govern. The Contractor's responsibilities extend to cover Subcontractors and Suppliers if liable as a result of their actions or obligations.
 - 1.02 **Contract Time Computation:** The time to complete the Work is not computed in Calendar Days. The Substantial Completion Date for this project is **Friday, June 11, 2010.**
 - 1.03 **Technical Specifications and Priority:** The following applies whenever priority is called for in Contract Documents: specifications must govern Drawings; figured dimensions must govern scaled dimensions; detail drawings must govern general drawings; Drawings must govern Submittals.
 - 1.04 **Indemnification:** The Contractor is required to defend, indemnify and hold harmless the Owner and the Professional, their employees, agents, servants, and representatives from and against all claims, suits, demands, actions of whatever type and nature and all judgments, costs, losses and damages, whether direct, indirect or consequential including, but not limited to, charges of architects, engineers, attorneys and others and all court, hearing and any other dispute resolution costs arising from:
 - (a) any patent or copyright infringement by the Contractor;
 - (b) any damage to the premises or adjacent lands, areas, properties, facilities, rights-of-way and easements, including loss of use to the business and property of others as a result of Contractor's operations;
 - (c) any bodily injury, sickness, disease or death, or injury to or destruction of property, including loss of use due to or related to the Work and caused in whole or in part by the Contractor or Subcontractor or Supplier's negligence, omissions or failure to maintain the required insurance and coverage and;
 - (d) a failure by the Contractor to appropriately handle Hazardous Materials for the Work or the Contractor's operations in compliance with the Owner requirements and/or applicable Laws and regulations.

The indemnification obligations are not affected by the limitation on the amount and types of damages, compensation or benefits payable by or for the Contractor or Subcontractor or Supplier under worker's or workman's compensation acts, disability benefit acts or other employee benefit acts.

1.5 Contract Documents Ownership: The State is the owner of the Contract Documents. The Contractor, Subcontractor or Supplier must not reuse any of the documents on any other Project without prior consent of the State and Professional. The Professional will furnish on behalf of the Owner at no cost to the Contractor, up to ten copies of Drawings and Project Manual.

2. General Provisions

2.01 Owner: the Project Director and/or Owner Field Representative will represent the Owner. Neither the Project Director nor the Owner Field Representative has the authority to interpret the requirements of the Contract Documents or to authorize any changes in the Work or any adjustment in Contract Price/Time. The State will provide the necessary easements for permanent structure and permanent changes in existing lands, areas, properties and facilities. However, the Contractor must obtain, at no increase in Contract Price/Time, permits for any other lands, areas, properties, facilities, rights-of-way and easements required by the Contractor for temporary facilities, storage, disposal of soil or waste material or any other purpose. The Contractor must submit copies of the permits and written agreements to the Owner. The Contractor must engage a registered land surveyor to establish the necessary reference points and/or base lines for construction and must be responsible for protecting them including benchmarks and Project elevations.

2.02 Professional: Acting as the Owner's representative during the Contract Time period, the Professional will endeavor to guard the Owner from Defective work and to keep the Owner informed of the progress of the Work. Unless delegated by specific written notice from the Owner, the Professional and the Professional's representatives do not have the authority to authorize any changes in the Work or any adjustment in Contract Price/Time. The On-site Inspections by the Owner Field Representative and/or the Professional do not relieve the Contractor from its obligation to provide the Work in accordance with the Contract Documents or represent acceptance of Defective Work.

2.03 Contractor: The Contractor must manage, supervise, and direct the Work competently, applying the management, supervision, skills, expertise, scheduling, coordination and attention necessary to provide the Work in accordance with the Contract Documents with a minimum disturbance to or interference to the business operations on site or adjacent properties. The Contractor must assign and maintain a competent full-time **superintendent** on the Work, as its representative, at all times while Work is being done on site and must not be replaced without the Owner's consent. The Contractor shall enforce good order among its employees and shall not employ on the work any disorderly, intemperate, or unfit persons, or not skilled in the work assigned to them. The Contractor is solely responsible for his Means and Methods, safety precautions and programs related to safety, the Contractor's failure to execute the Work in accordance with the Contract Documents and any act of omissions by the Contractor, Subcontractor or Supplier. The Contractor must **compare Contract Documents for conflicts**, unworkable or unsafe specified Means and Methods and verify against manufacturer's recommendations for installations and handling and must notify the Professional in writing of the discovery of any such conflicts or errors. The Contractor is required to furnish certifications that lines and grades for all concrete work were checked before and after placing concrete, and that final grades are as required by the Contract Documents. Wherever required, the Contractor must be responsible for all cutting, fitting, drilling, fixing-up, and patching of concrete, masonry, gypsum board, piping and other materials that may be necessary to make in-place Work and dependent Work fit together properly. The Contractor must restore to pre-existing conditions all walks, roadways, paved or landscaped areas and other real and personal property not designated for alteration by the Contract Documents. The Contractor must maintain at the site one copy of material safety data sheets (MSDS) and one copy of all **as-built/Record Documents** in good order and annotated in a neat and legible manner to show:

- a) all revisions made,
- b) dimensions noted during the furnishing and performance of the Work, and
- c) all deviations between the as-built installation and the Contract Documents, all approved Submittals and all clarifications and interpretations.

The Contractor must maintain and furnish promptly to the Owner and the Professional upon their request **daily field reports** recording the on-site labor force and equipment (Contractor and Subcontractors); materials/equipment received; visits by Suppliers; significant in-progress and completed trade Work within major areas; and other pertinent information. The Contractor is obligated to act to prevent threatened damage, death, injury or loss without any special instruction in **emergencies** and must give the Owner prompt written notice of any changes in Work resulting from the action taken for review and approval.

2.04 Subcontractors and Suppliers: The Owner assumes no contractual obligations to anyone other than the Contractor. All trade construction Drawings must be field coordinated before fabrication and/or installation. The Owner reserves the right to reject or revoke, for its convenience, any approved Subcontractor/Supplier. Work performed by any Subcontractor or Supplier must be through an appropriate written agreement that:

- (a) expressly binds the Subcontractor/Supplier to the requirements of the Contract Documents,
- (b) requires such Subcontractor or Supplier to assume toward the Contractor all the obligations that the Contractor assumes toward the Owner and the Professional, and
- (c) contains the waiver of rights and dispute resolution provisions.

3. Bonds and Insurance:

3.01 Both the Performance Bond and Payment Bond must remain in effect from the date of Contract Award until final completion of the Work or the end of Correction Period, whichever comes later. Insurance must be provided by insurers authorized to do business as an insurer in the State. The surety bonds required for a Construction Contract will not be accepted by Facilities Administration unless the surety bonding company is listed in the current United States Government, Department of Treasury's, Listing of approved sureties (bonding/insurance companies), Department Circular 570. This circular is published annually every July 1, in the Federal Register solely for providing a listing of companies holding certificates of authority as acceptable sureties on Federal bonds and as acceptable reinsuring companies required to provide bonds to the United States Government. Copies of the current Circular listing may be obtained through the internet web site at <http://www.fms.treas.gov/c570/c570.html>. Also, insurers must have an "A-" A.M. Best Company Rating and a Class VII or better financial size category as shown in the most current A.M. Best Company ratings. The insurance company must attach evidence that it is authorized by the Department of Energy, Labor and Economic Growth, Office of Financial and Insurance Services (OFIS) to do business as an insurer in Michigan. The State must be named as an additional insured on the General Liability Insurance policy. These certificates must specify the Project Index No., Project Title, and a description of the Project scope of work. The Contractor agrees that insurance coverage afforded under the policies as such coverage relate to the State under this Contract as determined by the Contractor will not be modified or canceled without at least thirty calendar days prior written notice to the State. To view the latest A.M. Best's Key Ratings Guide and the A.M. Best's Company Reports (which include the A.M. Best's Ratings) visit the A.M. Best internet web site at <http://www.ambest.com>. The Contractor must not perform any part of the Work unless the Contractor has in full force and effect all the required insurance.

3.02 The Apparent Low Bidder is required to provide proof of the minimum levels of insurance coverage as indicated below. The purpose of this coverage must be to protect the State from claims which may arise out of or result from the Contractor's performance of services under the terms of this Contract, whether such services are performed by the Contractor, or by any subcontractor, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable.

The Contractor waives all rights against the State for recovery of damages to the extent these damages are covered by the insurance policies the Contractor is required to maintain pursuant to this Contract. The Contractor also agrees to provide evidence that all applicable insurance policies contain a waiver of subrogation by the insurance company.

All insurance coverages provided relative to this Contract/Purchase Order is PRIMARY and NON-CONTRIBUTING to any comparable liability insurance (including self-insurances) carried by the State.

The Insurance must be written for not less than any minimum coverage herein specified or required by law, whichever is greater. All deductible amounts for any of the required policies are subject to approval by the State.

The State reserves the right to reject insurance written by an insurer the State deems unacceptable.

BEFORE THE CONTRACT IS SIGNED BY BOTH PARTIES [EXECUTED] OR BEFORE THE PURCHASE ORDER IS ISSUED BY THE STATE, THE CONTRACTOR MUST FURNISH TO THE DIRECTOR OF THE FACILITIES ADMINISTRATION, DESIGN AND CONSTRUCTION DIVISION CERTIFICATE(S) OF INSURANCE VERIFYING INSURANCE COVERAGE. THE CERTIFICATE MUST BE ON THE STANDARD "ACCORD" FORM. THE DMB FILE NUMBER AND INDEX NUMBER MUST BE SHOWN ON THE CERTIFICATE OF INSURANCE TO ASSURE CORRECT PROCESSING. All such Certificate(s) are to be prepared by the Insurance Provider and not by the Contractor. All such Certificate(s) must contain a provision indicating that coverages afforded under the policies WILL NOT BE CANCELLED, MATERIALLY CHANGED, OR NOT RENEWED without SIXTY days prior written notice, except for 10 days for non-payment of premium, having been given to the Director of Design and Construction Division, DMB-FA. Such NOTICE must include the CONTRACT NUMBER affected and be mailed to the Project Director.

The Contractor is required to provide the type and amount of insurance below:

3.02.01 Commercial General Liability Insurance with a limit of not less than \$1,000,000 each occurrence. If such CGL insurance contains a general aggregate limit, it must apply separately to this project.

The Contractor must list the State, its departments, divisions, agencies, offices, commissions, officers, employees and agents as ADDITIONAL INSURED(S) on the Commercial General Liability policy.

3.02.02 Contractor must have vehicle liability insurance for bodily injury and property damage as required by law on any auto including owned, hired and non-owned vehicles used in the Contractor's business.

The Contractor must list the State, its departments, divisions, agencies, offices, commissions, officers, employers and agents as ADDITIONAL INSURED(S) on the vehicle liability policy.

3.02.03 Worker's disability compensation, disability benefit or other similar employee benefit act with minimum statutory limits.

NOTE:

- a) If coverage is provided by a State fund or if Contractor has qualified as a self-insurer, separate certification must be furnished that coverage is in the state fund or that Contractor has approval to be a self-insurer;
- b) Any citing of a policy of insurance must include a listing of the States where that policy's coverage is applicable; and
- c) This provision must not be applicable where prohibited or limited by Michigan law.

3.02.04 Employer's Liability Insurance with the following minimum limits:

\$1,000,000 each accident
\$1,000,000 each employee by disease
\$1,000,000 aggregate disease

3.02.05 Pollution Liability Insurance in the amounts of not less than \$1,000,000 per occurrence is required.

Liability Insurance must be endorsed to list as additional insureds the Professional's consultants and agents. Worker's Compensation, Employer's Liability Insurance and all other liability insurance policies must be endorsed to include a waiver of rights to recover from the Owner, Professional and the other additional insureds. The Contractor's liability insurance must remain in effect through the Correction Period and through any special correction periods. For any employee of the Contractor who is resident of and hired in Michigan, the Contractor must have insurance for benefits payable under Michigan's Worker's Compensation Law. For any other employee protected by Worker's Compensation Laws of any other state, the Contractor must have insurance or participate in a mandatory state fund, where applicable, to cover the benefits payable to any such employee. These requirements must not be construed to limit the liability of the Contractor or its insurers. The Owner does not represent that the specified coverage or limits of insurance are sufficient to protect the Contractor's interests or liabilities.

3.03 Builder's Risk Insurance: If indicated on the Bid Summary, the Owner will purchase and maintain property insurance for 100% of actual cash replacement value of the insurable Work while in the course of construction, including foundations, additions, attachments, and all fixtures, machinery and equipment belonging to and constituting a permanent part of the building structures. The property insurance also will cover temporary structures, materials and supplies to be used in completing the Work, only while on the building site premises or within five hundred feet of the site. The property insurance insures the interests of the Owner, Contractor and all Subcontractors and Suppliers at any tier as their interest may appear. The property insurance insures against "all risk" of physical loss or damage to the extent usually provided in policy forms of insurers authorized to transact this insurance in Michigan, but will be subject to a deductible of \$5,000 for each loss occurrence. A copy of the master insurance policy will be kept at Facilities Administration, for review by the Contractor and Subcontractors. The Contractor must cooperate with the Owner in determining the actual cash replacement value of any insured loss. Any deductible amount must be paid by the Contractor. The Owner may purchase and maintain for its benefit boiler and machinery insurance.

3.04 The Owner and Contractor intend that the required policies of property insurance must protect all the parties insured and provide primary coverage for all losses and damages caused by the perils covered. Accordingly, to the extent that the insurance company pays claims, the Owner and the Contractor and its Subcontractors/Suppliers waive all rights against each other for any such losses and damages and also waive all such rights against the Professional and all other persons named as insureds or additional insureds.

4. Prosecutions; Substantial Completion:

4.01 The Contractor must not start the Work at the site before the first day established by the Notice to Proceed. A pre-construction conference will be held with the Contractor to review its Progress Schedule, qualifications of its key personnel, its proposed access to the site, traffic and parking, procedures for submittal, change orders, etc., and to exchange emergency telephone numbers. The Contractor must use its accepted Progress Schedule when making proposals or claims for adjustment in Contract Time/Price.

4.02 Except in an Emergency, all Work at the site must take place during normal working hours; 6:00 AM to 6:00 PM, during Business Days and in accordance with the special working conditions for the Agency. If the Contract Documents allow work outside the normal hours, the Contractor must provide a written notice to the Owner twenty-four hours before performing such Work and must reimburse the Owner any related increase in the costs incurred by the Owner such as overtime charges of the Professional and payments for custodial and security personnel.

4.03 If, upon inspection and completing all pre-requisite testing of the Work, the Contractor considers that a portion of the work or all of the Work is substantially completed, it must provide a list of items to be corrected or completed to the Owner and the Professional for joint inspection. Within ten Calendar Days of this joint inspection, the Professional will deliver to the Owner and Contractor a list of incomplete/Defective work or a Certificate of Substantial Completion with a Punch List. The certificate must:

- (a) fix a reasonable date of Substantial Completion,
- (b) fix a date for completion of the Punch List, and
- (c) recommend the division of responsibilities between the Owner and Contractor for utilities, security, safety, insurance, maintenance, etc.

Upon issuing the certificate, the Owner will pay for the completed Work subject to (a) withholding of two hundred percent of the value of any uncompleted Work, as determined by the Professional, and (b) any other deductions as the Professional may recommend or may withhold to cover Defective work, liquidated damages and the fair value of any other items entitling the Owner to a withholding. Prerequisites for Substantial Completion, over and above the extent of Work completion required, include (a) receipt by the **Owner** of operating and maintenance documentation, (b) all systems have been successfully tested and demonstrated by the **Contractor** for their intended use, and (c) the **Owner** having received all required certifications and/or occupancy approvals from the State and those Political Subdivisions having jurisdiction over the Work. Receipt of all certifications and/or occupancy approvals from those Political Subdivisions with jurisdiction in and of itself does not necessarily connote Substantial Completion.

The Contractor must provide all related operating and maintenance (O&M) documentation to the Owner before training if training is required and not later than Substantial Completion otherwise. The Contractor must give the Owner the final O&M documentation (with revisions made after Substantial Completion) before the request for final payment.

4.04 The Owner may decide to use, at its sole option, any functioning portion of the Work and will inform the Contractor in writing of the decision. The portion of Work to be used must be jointly inspected to determine the extent of completion if it has not undergone the inspection for Substantial Completion. The Professional must prepare a list of items to be corrected/completed and the Owner will allow the Contractor reasonable access to correct/complete the listed items and finish other work.

5. Warranty; Tests, Inspections and Approvals; Corrections of Work:

5.01 Warranty: The Contractor must furnish the State with a written guarantee to remedy any defects due to faulty materials or labor which appear in the Work within one year from the date of final acceptance by the State. This warranty excludes defect or damage caused by (a) abuse, modification by others, insufficient or improper operation or maintenance, or (b) normal wear and tear under normal usage. Manufacturer warranties for materials and equipment received by the Contractor must be assigned and promptly delivered to the Owner at Substantial Completion. The warranties must be in full force and effect for the entire duration of the Correction Period. Written warranties for specific equipment/products by their manufacturers or contractor workmanship/installation warranties of greater than one (1) year may be required for certain projects as described in the technical specifications.

5.02 Tests, Inspections and Approvals: The Owner will perform or retain a professional/agency to perform inspections, tests or approvals for those materials required to meet quality control standards specified in the Contract Documents. However, the Contractor must assume full responsibility for any testing, inspection or approval

- (a) required to meet code requirements, as promulgated by code inspecting authorities;
- (b) required by Law;
- (c) indicated or required by the Contract Documents;
- (d) required for the Professional's acceptance of a Supplier, materials or equipment or mix designs submitted for prior approval by the Contractor; or
- (e) Defective work, including an appropriate portion of the Delay and costs occasioned by discovery of Defective work. The Contractor must (a) pay all related costs; (b) schedule related activities; and (c) secure and furnish to the Professional the required certificates of inspection, testing or approval. The Contractor must provide proper and safe access to the site for inspection, testing or approval. The Contractor must provide the Professional a timely notice whenever any Work is ready for inspection, testing or approval. If the Contractor covers any Work without proper approval by the Professional as required by the Contract Documents, the Contractor must, at its own expense, uncover, expose or otherwise make available, when requested by the Professional or Owner, for testing, inspection or approval of the covered Work.

5.03 Correction of Work: If any testing, inspection or approval reveals Defective Work and the Work is rejected by the Professional, the Contractor, at its sole expense, must promptly, as directed, correct or remove the Defective Work from the site and replace it with non-Defective Work within the Correction Period. The Contractor must bear responsibility for its proportionate share of the Delay and costs resulting from the correction and/or removal and replacement of Defective Work. If the Contractor, within reasonable and agreed upon time after receipt of written notice, (a) fails to correct Defective Work or remove and replace rejected Work, or (b) fails to correct or complete items on any Punch List, or (c) fails to perform Work in accordance with the Contract Documents, or (d) fails to comply with any other provision of the Contract Documents, the Owner, directly or through others, after seven Calendar Days from the date of the written notice to the Contractor, may correct and remedy the Defective Work. To the extent necessary to correct and remedy such Defective Work, the Owner must be allowed to exclude the Contractor from all or part of the site; take possession of all or part of the Work and stop related operations of the Contractor; take possession of the Contractor's tools, plant and office and construction equipment at the site; and incorporate into the Work materials and equipment for which the Owner has paid the Contractor. The Contractor must allow the Owner and the Professional easy access to the site to correct such Defective Work. The Owner must be entitled to an appropriate decrease in Contract Price for all claims, costs, losses, damages and Delay incurred or sustained by the Owner which are attributable to the Contractor. Such costs may include, but are not limited to, costs of correction or removal and replacement of Defective Work, costs of repair and replacement of other work destroyed or damaged by the action and related charges of the Professional. If the discovery of the Defective Work takes place after final payment and the Contractor fails to correct and pay the Owner any of these costs, the Owner must demand due performance under the Performance Bond. Until the period of limitation provided by Michigan Law, the Contractor must promptly, and upon receipt of written notice from the Owner, correct Defective Work.

In the event of an Emergency or unacceptable risk of loss or damage or if appropriate under the circumstances, the Owner, directly or through others under contract with the Owner, may correct or remove and replace the Defective Work. The specified correction of Work requirements have no limitation on the rights of the Owner to have Defective Work corrected or removed and replaced, if rejected, except as otherwise provided by the Michigan Law.

5.04 Special Correction Period Requirements: Whenever the Owner undertakes any portion of the Work because the Contractor's act or omission Delays completion of the Work or it is eligible for Partial Use, the warranties for all materials and equipment incorporated into that portion of the Work must remain in full force and effect between the start of such Partial Use and the date when the Correction Period starts. The Correction Period for any Defective Work that is corrected or rejected and replaced within the last three months of the Correction Period must be extended by an additional six months, starting on the date such Work was made non-Defective.

5.05 Special Maintenance Requirements: If the Contract Documents specify that the entire Work, or a portion of the Work, upon reaching Substantial Completion, must not be placed in use by the Owner, the Contractor must maintain the Work, or specified part of the Work, in good order and proper working condition and must take all other actions necessary for its protection between the certified date of Substantial Completion and the date when the Work, or designated part of the Work, is placed in use. If no separate price for such special maintenance period was requested and made part of the Contract Documents, the Owner will amend the Contract Documents to appropriately increase the Contract Price.

6. Changes:

6.01 Changes in the Work: The Owner may, at any time, without notice to sureties, make any changes bilaterally or unilaterally, by a written Change Order, in the Work within the general scope of the Contract, including but not limited to changes in the Specifications, materials, or Contract Time. In a bilateral change order, the Owner may direct the Professional to prepare a Bulletin describing the change being considered. Upon receiving the Bulletin, the Contractor establishes the cost and returns it to the Professional for review within 15 calendar days. The Contractor's proposal must be irrevocable for 60 Calendar Days after it is submitted to the Professional. If the Professional recommends acceptance of the Bulletin and the Owner agrees with the changes, the Owner issues a written bilateral Contract Change Order to amend the Contract Documents. However, the Owner may issue a unilateral Change Order if the Owner and Contractor are unable to agree on the adjustment in Contract Price or Time. If the Contractor disagrees with such unilateral Contract Change Order, the Contractor must complete the Work and may deliver notice of a claim in accordance with the claim submittal process.

6.02 Differing Site Condition: The Owner does not warrant that any technical data, including the Project reference points, provided by the Owner is necessarily sufficient and complete for the purpose of selecting Means and Methods, initiating, maintaining and supervising safety precautions and programs or discharging any other obligation assumed by the Contractor under the Contract Documents. If different or unknown site conditions are discovered, the Contractor must notify the Owner in writing before the conditions are disturbed or before proceeding with the affected Work. Upon review, if the Owner decides to agree with the differing site conditions, with the Professional's advice, the Owner may issue a written Contract Change Order to amend the Contract Price or Time through the Bulletin authorization process. If the Owner decides to disagree with the Contractor and the Contractor disagrees with the Owner's decision, the Contractor must complete the Work and may deliver notice of a claim in accordance with the claim submittal process. No proposal or claim by the Contractor due to differing site conditions will be allowed (a) if the Contractor knew of their existence before submitting its Bid or if those conditions could have been discovered by any reasonable examinations for which the Contractor, as Bidder, was made responsible under the Bidding Requirements and/or (b) unless the Contractor's notice is provided on a timely basis and gives the Owner adequate opportunity to investigate the asserted differing site conditions.

6.03 Responsibilities for Underground Utilities: The Contractor must comply with the 1974 PA 53, as amended, MCL 460.701 et seq., and all other Laws concerning Underground Utilities. Before performing site Work, all Underground Utilities, lines and cables (public and private) must be located and marked. The Contractor must notify MISS DIG to locate and mark utilities on properties that are not State properties.

Three full working days before you dig, call the MISS DIG System at 800-482-7171 or 811. The new 811 number is a national "Call Before You Dig" phone number designated by the Federal Communications Commission (FCC) to eliminate the confusion of multiple "Call Before You Dig" numbers

The MISS DIG System member utilities will mark the approximate location of their underground public utility lines at no charge. MISS DIG System, Inc. DOES NOT MARK!

The contractor proceeds with the commencement of the Work at his/her own risk.

In addition, the Contractor must be responsible for immediately notifying the Owner of any contact with or damage to Underground Utilities, and for the safety, protection of and repairing any damage done to any Work, surface and subsurface facilities. If the Contractor encounters Underground Utilities that inaccurately located by the Contract Documents or not previously located/marked, which could not be reasonably have been seen, the Owner may issue a written Contract Change Order to amend the Contract Price or Time through the Bulletin authorization process.

- 6.04 Hazardous Material Conditions:** If the Contractor encounters material reasonably believed to be Hazardous Material, which was not described in the Drawings and/or Specifications and was not generated or brought to the site by the Contractor, the Contractor shall immediately stop all affected work, give written notice to the Owner of the conditions encountered, and take appropriate health and safety precautions in accordance with all federal, State and local laws. Upon receipt of the notice, the Owner will investigate the conditions and (a) may stop the Work and terminate the affected Work or the Contract for convenience; (b) may contract others to have the Hazardous Material removed or rendered harmless or; (c) issue a written Contract Change Order to amend the Contract Price/Time through the Bulletin authorization process. If the Hazardous Material is brought to site by the Contractor or as a result in whole or in part from any of its violation of any Law covering the use, handling, storage, disposal of, processing, transport and transfer or from any other act or omission within its control, the Contractor is responsible for the Delay and costs to cleanup the site, remove and render harmless the Hazardous Material to the satisfaction of the Owner, State and all Political Subdivisions with jurisdiction.
- 6.05 Incidents with Archaeological Features:** The Contractor must immediately notify the Owner in writing of any Archeological Feature deposits encountered at the site and must protect the deposits in a satisfactory manner. If the Contractor encounters such features, which result in an anticipated change to the Contract Price/Time, the Owner may issue a written Contract Change Order through the Bulletin authorization process.
- 6.06 Unit Price Work:** Quantities as listed have been carefully estimated but are not guaranteed. The State reserves the right to increase or decrease the quantities of the Work to be performed at the Unit Price by amounts up to 20 percent of the listed estimated quantities. For Unit Price Work, the Contractor must promptly inform the Professional in writing if actual quantities differ from the estimated quantities for any item. For quantities over 120% or below 80% of the estimated quantity, the Owner may negotiate a Unit Price with the Contractor, or direct a unilateral change, or bid that Work under separate contract. Any adjusted Unit Price agreed upon by the Owner will only apply to the actual quantities above 120% or below 80% of the estimated quantity. No adjustment due to quantity variations must be allowed (a) unless the Contractor met the notice requirements, or (b) if any Unit Price increase results in whole or in part from any act or omission within the control of the Contractor (errors in the Contractor's Bid, unbalanced Unit Prices, etc.). If a dispute arise between the Owner and the Contractor on the adjusted Unit Price, the Contractor must carry on the Work with due diligence during the disputes/disagreements.
- 6.07 Cash Allowances; Provisionary Allowances:** The Contractor must obtain the Professional's written acceptance before providing materials, equipment, or other items covered by Cash Allowance. Payments under a Cash Allowance must be on actual cost and exclude cost for supervision, handling, unloading, storage, installation, testing, fee, premiums for bond and insurance, etc. Work authorized under any Provisionary Allowance may consist of (a) changes required by actual conditions, as determined by the **Professional**, and (b) any other Work authorized and completed under the pertinent provisions of the Contract Documents. Unlike a Cash Allowance, payments under a Provisionary Allowance will include not only the purchase/furnished cost of the materials and equipment involved, but also all related labor costs, subcontract costs, construction equipment costs, general conditions costs and Fee, provided they are calculated in accordance with the requirements of the contract documents.
- 6.08 Changes in Contract Price:**
- 6.08.01 The Contractor's proposals or claims for Work Involved must detail all affected items of Work, whether increased, revised, added or deleted, and must be fully documented and itemized as to (a) individual adds and deducts in Work quantities and labor man-hours; (b) corresponding itemized cost of Work Involved; (c) materials and equipment cost including transportation, storage and suppliers' field services; and (d) Fee.
- 6.08.02 For Contractor's proposals or claims for adjustments in Contract Price arising from Delays, the Contractor's estimates must be as comprehensive and detailed as may be appropriate to support the proposal or claim. Examples of related information include labor manpower levels, production data and Progress Schedule revision.
- 6.08.03 If the Contract Documents use lump sum or Unit Prices for the Work Involved, those prices must be used in estimating the price change. Otherwise, the Owner may direct the Contractor to proceed (a) on a negotiated lump sum; or (b) on an actual cost basis with or without a guaranteed maximum; or (c) through a unilateral Change Order on a lump sum basis or a not-to-exceed basis, based on the Professional's estimate of the anticipated Cost of the Work Involved and a fee. Items making-up the Cost of the Work Involved must be allowable to the extent (a) consistent with those prevailing in the Project locality, (b) necessary, reasonable and clearly allocable to the Work Involved, and (c) limited to labor costs, subcontract costs, material and equipment costs, construction equipment costs and general conditions costs.
- 6.08.04 In estimating any additional cost by the Contractor or its Subcontractor, the rates for the craft labor man-hour used in estimating changes in Contract Price must not exceed the rates in Means Cost Data (Means) or other cost guide acceptable to the Owner. If the rates exceed the acceptable cost guides, the Contractor must provide proper justifications acceptable to the Professional and the Owner. The payroll costs may be used to quote a Bulletin. However, the payroll costs must include wages, labor burdens and a factor for field supplies and purchase costs (less market values if not consumed) of tools not owned by the workers. Labor burdens must be certified by an authorized financial representative of the Contractor and may include social security, unemployment, taxes, workers' compensation, health and retirement benefits, vacation and holiday pay.

The factor for field supplies and tools (individually valued at less than \$1,000.00) must not exceed 4% of the wages without burdens, unless detailed data, which supports higher costs, is provided. Rates for owned, rented or leased construction equipment must be in accordance with the contract price rates. Otherwise, the appropriate hourly, daily, weekly or monthly rates listed in Means must be used. However, if the total rental or lease cost of an item to the Project exceeds the reasonable purchase price of the rented or leased item, the Owner reserves the right to pay only the purchase price of the item and take title to the item. Operating cost must not exceed the hourly operating rate in Means and for multiple shifts, rates must not exceed the shift work adjustments recommended in the Cost Guide.

- 6.08.05 The cost of any Work Involved may include necessary general conditions costs to the extent those costs increase or decrease on account of, or are directly attributable to, the performance of the furnishing and/or performance of the additional Work Involved, or are required due to an extension in Contract Time or Delays. Such costs may include payroll costs of personnel, temporary facilities at the site, liability insurance and bond premiums, Subcontractors, royalty payments and fees for permits and licenses and taxes on the Work Involved.
- 6.08.06 A contractor or subcontractor who performs the Work may charge a fee of up to 15% of the cost of Work involved for overhead and profit Contractor may charge a mark-up fee of up to 5% of its Subcontractor's cost excluding fees if the Work is performed by the Subcontractor. If Work is to be performed by lower tier Subcontractor(s), Intermediate Subcontractors must share a fee of up to 5% of the lowest tier Subcontractor's cost excluding fees. The total mark-up fees for the Work must not exceed 25% of the lowest tier subcontractor's cost excluding fees. If the adjustment to the Contract Price incorporates a contractor reservation of rights to claim additional adjustments, the fees must be reduced by one-third. Contractor's administrative costs and home office overhead must be non-reimbursable expenses covered by the Fee for the Work.

6.09 Changes in Contract Time:

- 6.09.01 If a justified extension beyond the Contract Time is not reasonably anticipatable under the circumstances, the Owner may approve an extension to the Contract Time through the Bulletin authorization process at no additional cost to the Owner. Examples of events that may justify an extension in the Contract Time include acts of God; acts of the public enemy; fires; floods; and strikes.
- 6.09.02 If, at any time during the life of this Contract, the Contractor finds that for reasons beyond its control, it will be impossible to complete the Work on or before the Contract completion date, a written request for a change to the Contract extending the time of completion must be submitted. Such a request must set forth in precise detail the reasons believed to justify an extension and must be in such format as the State may require.
- 6.09.03 When submitting a quotation for a Contract change authorization for extra work or change in plans, the Contractor must include as part of the quotation, a statement requesting any extra time necessary to complete the related Work. Lack of such a statement will serve as notification that the extra time will not be required to complete the Contract work and will waive the right to a later claim. The Owner will not pay additional compensation to the Contractor for performing Contract Work during any extension period granted.
- 6.09.04 If the Progress Schedule and the funding allow for an early completion date, the Contractor may submit to the Owner for approval, a request to shorten the Contract Time. If approved by the Owner, the new Contract Time applies to the Project and liquidated damages, if any, will be assessed for any delays after the new completion date.

- 6.10 Access to Records:** The Contractor and its Subcontractors must comply with the Prevailing Wage Rates for the county where the Project is located, and must maintain and keep, in accordance with generally accepted accounting principles, records pertaining to the bidding, award and performance of the Work, including, but not limited to certified payroll, employment records and all data used in estimating the Contractor's prices for the Bid, Change Order, proposal or claim. The Owner or its representative must have access to those records, must have the right to interview the Contractor's employees and must be provided with appropriate facilities for the purpose of inspection, audit/review and copying for five years after final payment, termination or date of final resolution of any dispute, litigation, audit exception or appeal. The payroll and other employment records of workers assigned to the site must contain the name and address of each worker, correct wage classification, rate of pay, daily and weekly number of hours worked, deduction made and actual wages paid. The Contractor must maintain records that show: (a) the anticipated costs or actual costs incurred in providing such benefits, (b) that commitment to provide such benefits is enforceable, and (c) that the plan or program is financially responsible and has been communicated in writing to the workers affected.

- 6.11 Price Reduction for Defective Cost or Pricing Data:** Whenever the Contractor signs a proposal for a change in the Contract or claim settlement, the Contractor will be deemed to have certified on behalf of itself, Subcontractors and Suppliers, to its best knowledge and belief that the proposal and its contents (a) were made in good faith and are consistent with the facts and the provisions of the Contract; and (b) are current, complete and accurate. If the Contract Price/Time is increased by any Change Order, claim or dispute settlement because the Contractor, Subcontractor or Supplier, at any tier, represented or furnished cost or pricing data of any kind that were false, contained math errors or were incomplete, the Contract Price must be correspondingly reduced by Change Order. If there is a good cause to doubt the Contractor's compliance with the Defective cost and pricing data requirements, the Owner must be entitled to make an appropriate withholding from any payment otherwise owed to the Contractor.

7. Payments

- 7.01 Schedule of Values:** The Schedule of Values must be approved by the Professional and accepted by the Owner and must divide the Work into pay items for significant Sections and areas, facilities or structures, with subtotals for first tier Subcontractors. If required in Division 1, the accepted Schedule of Values must be supported by a more detailed breakdown allocating the pay items to the Progress Schedule Activities. It must tabulate labor costs, Subcontract costs and material and equipment costs. Labor costs must include appropriate sums for construction equipment costs, general conditions costs, administrative costs and profit, unless separate pay items are itemized for those costs. The Schedule of Values must include two percent of the Contract Price for each of the following close-out pay items: (a) fire safety inspection, certificate of occupancy and other code approvals, as specified in the Contract Documents, (b) manufacturer warranties, finalized operating and maintenance documentation, Owner training documentation, and test and balance reports, and (c) finalized as-built/Record Documents.
- 7.02 Requests for Payment:** Not more than once every thirty Calendar Days, the Contractor may submit to the Professional a Request for Payment on the Owner's form signed by the Contractor certifying Work completed and enclosing all supporting documentation. A draft copy of the payment request may be submitted to the Owner Field Representative for review and comments. For projects under \$50,000, the Contractor may not submit more than two requests in addition to the final payment request. Each Request for Payment must certify that all monies owed by the Contractor to Subcontractors and Suppliers for which payment previously has been sought has been paid from payments received. No Request for Payment must include amounts for a Subcontractor or Supplier if the Contractor does not intend to use the payments requested, when received, to reduce the Contractor's outstanding obligations on the Work. The Owner will pay the Contractor within thirty Calendar Days after the Owner receives and approves a certified Request for Payment from the Professional. The Contractor will provide a certification in writing that the payment request submittal is true and accurate. If payment is requested based on materials and equipment stored at the site or at another location agreed to in writing, the Request for Payment also must be accompanied by (a) consent of surety, (b) a bill of sale, invoice or other documentation warranting that the Owner has received the materials and equipment free and clear of all liens, and (c) evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect them and the Owner's interests. The Contractor warrants and guarantees that title to all Work, materials and equipment covered by any Request for Payment, whether incorporated in the Work or not, will pass to the Owner free and clear of all liens no later than at the time of payment by the Owner to the Contractor.
- 7.03 Review of Request for Payment; Intent of Review:** Within ten Calendar Days after receipt of a Request for Payment, the Professional must certify to the Owner the amount the Professional determines to be due, or must return the Request for Payment to the Contractor indicating the reasons for withholding certification. The Professional's certification of any Request for Payment constitutes a representation to the Owner that the Work has progressed to the point indicated; that to the best of the Professional's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents; and that the Contractor is entitled to payment in the amount certified. In the case of final payment, the Professional's certification of final payment and recommendation that the Work is acceptable must be a further representation that conditions governing final payment to the Contractor have been met.
- 7.04 Refusal to Make or to Recommend Payment:** The Owner may withhold from any payment an amount based on the (a) Professional's refusal to recommend payment or (b) Owner's estimate of the fair value of items included in the payment request. The Owner will give the Contractor reasonably prompt written notice supporting such action. The Professional may refuse to recommend any part of any payment, or because of subsequently discovered evidence, inspections or tests or the value of the Punch List, nullify all or any portion of any payment previously recommended, as the Professional may consider necessary to protect the Owner from loss because:
- (a) the Work is Defective or completed Work has been damaged requiring correction or replacement,
 - (b) the Contract Price has been reduced by Change Order,
 - (c) it has been necessary that the Owner correct Defective Work or complete Work,
 - (d) reasonable evidence exists that all or a part of the Work will not be completed within the corresponding Contract Time,
 - (e) the Contractor failed to comply with any material requirements of the Contract, including, but not limited to the failure to submit Progress Schedule Submittals or as-built/Record Documents when due,
 - (f) stored materials for which payment has been made or is sought has been determined by the Professional or the Owner Field Representative to be damaged or missing, or
 - (g) the Professional reasonably believes or knows of the occurrence of an event justifying termination for cause.
- 7.05 Request for Final Inspection:** The Contractor must complete the Substantial Completion Punch List within the Contract Time and date. The Contractor must assemble all required documentation before requesting final inspection in writing. The Contractor may request final inspection of the entire Work, or the part of the Work for which final payment is specified in the Contract Documents. Upon this written notice, and if deemed appropriate by the professional, the Professional will make a final completion inspection with the Owner and Contractor and notify the Contractor of all incomplete or Defective Work revealed by the Final Inspection. The Contractor must immediately correct and complete the Work.
- 7.06 Close-out Documents:** The Contractor must prepare and submit the following documentation before requesting final inspection or final payment: final operating and maintenance documentation (with revisions made after Substantial Completion), warranties, inspection certificates, as-built/Record Documents, release of payment claim forms, and all other required documents.
- 7.07 Request for Final Payment:** The Contractor may request final payment after correcting or completing the Work to the satisfaction of the Professional and delivering close-out documentation (7.6). The Contractor's request for final payment must also enclose:

- (a) evidence of completed operations insurance and an affidavit certifying that the insurance coverage will not be canceled, materially changed, or renewal refused,
- (b) an affidavit certifying that the surety agrees that final payment does not relieve the surety of any of its obligations under the Performance Bond and Payment Bond,
- (c) a completed DMB-460 Form close out checklist,
- (d) a list of all pending insurance claims rising out of or resulting from the Work being handled by the Contractor and/or its insurer
- (e) Contractor's 'Guarantee and Statement' (DMB-437) containing a statement of guaranteed indebtedness acceptable to the Owner in the full amount of the Contract Price, or a release of payment claims in the form of a release of liens, or a Bond or other security acceptable to the Owner to indemnify the Owner against any payment claim.

7.08 Final Payment and Acceptance: If the Professional is satisfied that the entire Work, or the part of the Work for which final payment is specified in the Contract Documents, is complete and the Contractor's other obligations under the Contract Documents has been fulfilled, the Professional will furnish to the Owner and Contractor the Professional's certification of final payment and acceptance within thirty Calendar Days after receipt of the final payment request. If the Professional is not satisfied, the Professional will return the request to the Contractor indicating in writing the reasons for not certifying final payment. If the final payment request is returned, the Contractor must correct the deficiencies and re-request final payment. If the Owner concurs with the Professional's certification of final payment the Owner will, within thirty Calendar Days after receipt of the Professional's certification of final payment, pay the balance of the Contract Price subject to those provisions governing final payment specified in the Contract Documents. If the Owner does not concur with the Professional's determination, the Owner will return the request for final payment to the Contractor with written reasons for refusing final payment and acceptance.

7.09 Contractor's Continuing Obligation: The following does not constitute acceptance of the Work in the event the Work or any Work is not in accordance with the Contract Documents, and therefore does not release the Contractor from its obligation to perform and furnish the Work in accordance with the Contract Documents:

- (a) a certification by the Professional of any Request for Payment or final payment;
- (b) the issuance of a Substantial Completion certificate;
- (c) any payment by the Owner to the Contractor;
- (d) any Partial Use;
- (e) any act of acceptance by the Owner or any failure to do so;
- (f) any review and approval of a Shop Drawing, sample, test procedure or other Submittal;
- (g) any review of a Progress Schedule;
- (h) any On-Site Inspection;
- (i) any inspection, test or approval;
- (j) any issuance of a notice of acceptability by the Professional; or
- (k) any correction of Defective Work or any completion of Work by the Owner.

7.10 Waiver of Claims: The making of final payment does not constitute a waiver by the Owner of any rights as to the Contractor's continuing obligations under the Contract Documents, nor will it constitute a waiver of any claims by the Owner against the Contractor still unsettled, or arising from unsettled payment claims, Defective Work appearing after final inspection or failure by the Contractor to comply with the Contract Documents or the terms of any special warranties provided by the Contract Documents or by Law. The acceptance of final payment will constitute a waiver of all claims by the Contractor against the Owner, other than those claims previously made in writing, on a timely basis.

8. Other Work: During the Contract Time, the Owner may self perform or Contract for other work at the site. By doing so, the Owner or its representative will coordinate the operations of the Contractor and the other work. Whenever the other work interfaces with the Contractor's Work on site, the Contractor must coordinate its activities with the interfacing work, inspect the other work and promptly report to the Professional in writing if the other work is unavailable or unsuitable. The Contractor's failure to do so will constitute an acceptance of such other work as fit and proper for integration with the Work except for latent or non-apparent defects and deficiencies in the other work. The Contractor must provide proper and safe access to the site for handling, unloading and storage of their materials and equipment and for the execution of the other work. The Contractor must do all cutting, fitting, patching and interfacing of the Work that may be required to make any part of the Work come together properly and integrate with other work. If the Contractor becomes party to a dispute or claim due to damages caused to its Work/property or other work/their property, the Contractor must promptly attempt, without involving the Owner or the Professional or their agents, to settle with the other party by agreement or otherwise resolve the claim. If the Owner determines that the other work resulted in a delay to the Work to be performed by the Contractor and such delay justifies a Change Order, the Owner will authorize the necessary adjustment in Contract Price and/or Time.

9. Stop Work Orders and Suspension of Work: The Owner may order the Contractor in writing to defer, stop, suspend or interrupt all or part of the Work, in the event any of the following situations:

- (a) any Work is Defective,
- (b) any Work, when completed, will not conform to the Contract Documents,
- (c) any materials or equipment are unsuitable,
- (d) any workers are insufficiently skilled,
- (e) failure of the Contractor to implement appropriate measures for the SESC, or
- (f) as the Owner may determine appropriate for its convenience.

The Contractor is responsible for the Delays and any additional costs if at fault. Any justified increase in Contract Price/Time due to suspension of Work must be submitted within thirty Calendar Days of knowing the extent of Delays and before submitting the final payment.

10. Termination:

10.01 Termination for Breach: The Owner may elect to terminate all or any part of the Work if:

- (a) the Contractor fails to complete the Work, or a specified part of the Work, within the corresponding Contract Time; fails or refuses to supply sufficient management, supervision, workers, materials or equipment; or otherwise fails to prosecute the Work, or any specified part of the Work, with the diligence required to comply with the Contract Time(s);
- (b) the Contractor persistently disregards the authority of the Professional or violates or disregards a provision of the Contract Documents or the Laws of any Political Subdivision with jurisdiction;
- (c) the Contractor admits in writing, or the Owner otherwise establishes, the Contractor's inability or refusal to pay the Contractor's debts generally as they become due;
- (d) in response to the Owner's demand, the Contractor fails to provide adequate, written assurance that the Contractor has the financial resources necessary to complete the Work within the Contract Time;
- (e) the Contractor fails to comply with the Michigan Residency requirements (1984 PA 431, as amended, MCL 18.1241a); or is found to be in violation of Section 4 of 1980 PA 278 concerning unfair labor practices, or any nondiscrimination requirements imposed by Law;
- (f) at any time, the Contractor, Subcontractor or Supplier is in violation of unfair labor practices prohibited by Section 8 of Chapter 327 of the National Labor Relations Act, 29 U.S.C. 158; or
- (g) the Contractor violates or breaches any material provision of the Contract Documents, which provides contractually for cause termination or rescission of the Contract or of the Contractor's right to complete the Work.

Within seven Calendar Days after the Contractor receives a notice requiring assurance of due performance for any of the above occurring non-conformances, the Contractor must meet with the Owner and present the Contractor's plan to correct the problems. If the Owner determines that the Contractor's plan provides adequate assurance of correction, that determination does not waive the Owner's right to subsequently default the Contractor or affect any rights or remedies of the Owner against the Contractor and/or surety then existing or that may accrue in the future. The Owner, after giving the Contractor and surety seven Calendar Days' written notice of intent to default, may declare the Contractor in default and terminate the services of the Contractor for cause. Unless otherwise agreed between the Owner and Contractor, at the expiration of the Seven-Calendar Day (intent to default) period, the Contractor must immediately stop all Work and proceed in accordance with the Owner's instructions. Following the expiration of the Seven-Calendar Day (intent to default) notice, the Contractor will be sent a default letter – notice of termination for cause. The Owner will issue a Contract Change Order to revise the name of the contract party to the name of the surety company. The surety company must undertake to perform and complete the Work, in accordance with the Contract Documents, in place of the Contractor, either through the surety's agents or by executing agreements with qualified contractors (excluding the Contractor and any of the Contractor's affiliates), or both.

The Owner may issue a fifteen-Calendar Day notice of intent to default the surety company if they fail to execute in a timely manner the completion of the Contract Work. Without an adequate plan of correction, the Owner may issue a notice of termination for cause letter to the surety. If a termination of the contract with the surety occurs, the Owner reserves the right to complete the Work.

If the Owner has terminated the Contractor, any such termination will not affect any rights or remedies of the Owner against the Contractor or surety, or both, then existing or that may accrue after termination. All provisions of the Contract Documents that, by their nature, survive final acceptance of the Work must remain in full force and effect after a termination for cause of the Contractor or default of the surety, or both. The Owner may, in its sole discretion, permit the Contractor to continue to perform Work when the Contractor is in default or has been defaulted. Such decision by the Owner in no way operates as a waiver of any of the Owner's rights under the Contract Documents or Performance Bond, nor in the event of a subsequent default, entitle the Contractor or surety to continue to perform or prosecute the Work to completion.

10.02 For non-bonded projects, the Owner will follow the termination protocol in Paragraph 10.1 without involving a surety.

10.03 Termination for Convenience of the Owner: Upon fifteen Calendar Days' written notice to the Contractor and surety, or sooner if reasonable under the circumstances, the Owner may, without cause and without prejudice to any other right or remedy it may have, elect to terminate any part of the Work, or the Contract in whole or in part, as the Owner may deem appropriate for its convenience. Upon receipt of any such termination notice, the Contractor must immediately proceed in accordance with any specific instructions, protect and maintain the Work, and make reasonable and diligent efforts to mitigate costs associated with the termination. In such termination, the Contractor must be paid in accordance with the terms of this Contract for only services rendered before the effective date of termination. Upon termination for convenience, the Contractor must be released from any obligation to provide further services and the Owner must have full power and authority to take possession of the Work, assume any agreements with Subcontractors and Suppliers that the Owner selects, and prosecute the Work to completion by Contract or as the Owner may deem expedient.

10.04 Termination for Lack of Funding: If expected or actual funding is withdrawn, reduced or limited in any way before the-completion date set forth in this Contract or in any amendment, the State may, upon written notice to the Contractor, terminate this Contract in whole or in part in accordance with Paragraph 10.3.

11. Disputes: All claims, counterclaims, disputes and other matters in question between the Owner and Contractor arising out of or relating to the Contract Documents must be submitted in writing to the Professional and otherwise processed and resolved as provided in this Article. The Contractor must carry on the Work with due diligence during all disputes or disagreements. Work must not be delayed or postponed pending resolution of any disputes or disagreements. The Contractor must exercise reasonable precautions, efforts and measures to avoid situations that would cause delay.

11.01 Notice of Claim: Except for Owner claims for liquidated damages, no claim is valid unless it is based upon written notice delivered by the claimant to the other party promptly, but in no event later than thirty Calendar Days after the Professional's or Project Director's determination giving rise to the claim. The notice must state the nature of the dispute, the amount involved, if any, and the remedy sought. The claim submittal with all supporting data must be delivered within sixty Calendar Days after the determination giving rise to the claim (unless the Professional allows an extension). The responsibility to substantiate claims rests with the claimant. A claim by the Contractor must be submitted to the Professional and Project Director for a recommendation or decision from the Professional. A claim by the Owner must be submitted to the Contractor and the Professional for a written recommendation or decision by the Professional. The Owner reserves the right to audit any Contractor claim (or claim package) that the Contractor values at more than \$50,000.00. Pending final resolution of any claim under this Article, the Contractor must proceed diligently with the Work and comply with any decision of the Owner and/or Professional. For all Contractor claims seeking an increase in Contract Price or Contract Time, the Contractor must submit an affidavit, certifying that the amount claimed accurately reflects any Delay and all costs that the Contractor is entitled from the occurrence of the claimed event and that supporting cost and pricing data are current, accurate, complete and represent the Contractor's best knowledge and belief. The affidavit must be signed in the same manner as required in Item 6 of Section 00100.

11.02 Recommendations or Decisions from the Professional: For claims under \$100,000.00, if requested in writing by the Contractor, the Professional will render a recommendation or decision within thirty Calendar Days after the request and the Owner will issue, if necessary, a determination within thirty Calendar Days after the Professional's recommendation or decision. For claims exceeding \$100,000.00, the Professional will issue its recommendation or decision and the Owner, if necessary, will issue its determination, within sixty Calendar Days.

If the Professional denies a Contractor claim or agrees with an Owner claim, that decision must be final and binding on the Contractor, without any determination by the Owner, unless the Contractor files a request for a presentation with the Director-FA within thirty Calendar Days. To the extent that any recommendation from the Professional is partly or wholly adverse to a claim from the Owner, that determination must be final and binding on both the Owner and Contractor unless either party files a request for a presentation with the Director-FA within thirty Calendar Days. If the Professional recommends payment of any Contractor claim which increases the Contract Price, that recommendation is subject to the Owner's written approval. In the event any such determination from the Owner is partly or wholly adverse to the preceding recommendation from the Professional, that determination must be final and binding on the Contractor unless the Contractor files suit in the Michigan Court of Claims within thirty Calendar Days after receipt of such determination. The claim is waived if not made in accordance with these requirements.

If either the Contractor or Owner is not satisfied with any decision of the Professional on a claim, that party must, within thirty Calendar Days of receiving that decision, file a written appeal with complete supporting documentation with the Director-FA.. The Director-FA has discretion concerning the allowability of evidence submitted, and is not bound to any rules of evidence. If the right to a presentation is waived or if a presentation is conducted and the dispute remains unresolved, the Director-FA, at the Director-FA's sole option, must specify in which forum the dispute must be conducted by issuing a written determination to the Contractor that the dispute if the Contractor so elects, be submitted in writing to the Michigan Court of Claims. The Director-FA's determination on the dispute is final and binding on the Contractor unless the Contractor files a lawful action in the Michigan Court of Claims within thirty Calendar Days after receiving the Director-FA's determination. After settlement or final adjudication of any claim, if payment by the Contractor is not made to the Owner, the Owner may offset the appropriate amounts against (a) payments due to the Contractor under any other Contract between the Owner and the Contractor, or (b) any amounts for which the Owner may be obligated to the Contractor in any capacity. The Director-FA may designate someone to fulfill the Director-FA's duties under these terms and conditions.

SECTION 00750 SPECIAL WORKING CONDITIONS

The Work is for the Department of Natural Resources, Parks and Recreation Division and their special working conditions are included in Appendix II. Contractor must comply with all security regulations. Access to and egress from the buildings/grounds must be via routes specifically designated by the State Agency. Whenever the Contractor has caused an operating security system to go out of service, or left unsecured openings in existing facilities or security fences, the Contractor must furnish a security guard acceptable to the Owner to maintain security of the facility outside of normal working hours and will be held responsible for any losses from the facility. The Contractor must maintain at all times dust control measures to the satisfaction of the Owner.

SECTION 00800 SUPPLEMENTARY CONDITIONS – None Identified

SECTION 00850 PREVAILING WAGE RATE DETERMINATION – SEE APPENDIX I FOR RATE SCHEDULE

The Contractor and all Subcontractors must comply with all Laws pertaining to occupational classifications and to the following requirements:

1. The rates of wages and fringe benefits to be paid to each class of construction mechanics must not be less than the wage and fringe benefit rates issued by the Michigan Department of Energy, Labor and Economic Growth (MDELEG), Wage and Hour Division in its schedule of occupational classification and wage and fringe benefit for the locality in which the Work is to be performed. These prevailing wage rates are included in Appendix I.
2. The Contractor must keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates as prescribed in the Contract and the address and telephone number of the MDELEG's office responsible for enforcing these provisions, and must keep an accurate record showing the name and classification of each Person performing Work on the site, the dates on which Work was performed, the hours each Person worked on the site and the actual hourly wage and benefits paid to each Person. This record must be notarized by a Notary Public and must be available to DMB-FA and MDELEG for an audit or inspection, at any time, upon their request.
3. If any trade is omitted from the schedule of wages and fringe benefit rates included in Appendix I, the trades omitted must also be paid not less than the wage and fringe benefit rates prevailing in the locality in which the Work is to be performed.
4. The Contractor must keep posted on the construction site, in a conspicuous place, notice that construction mechanics, as the intended beneficiaries of 1965 PA 166, as amended, who have not been paid in accordance with the Act may file a claim with the MDELEG.

A finding by the MDELEG that the Contractor or any Subcontractor is in violation of these requirements is final.

SECTION 00900 ADDENDA

Each Bid submittal must include acknowledgement of receipt and review of all Addenda issued during the Bidding period.

END OF DIVISION 00

DIVISION 01
GENERAL REQUIREMENTS

SECTION 01010 SUMMARY OF WORK

1. GENERAL:

1.01. General information covering the "Scope of Work" is specified on the Invitation to Bid. Additional information is as follows:

1.01.01 The Contractor shall abide by the general provisions set forth in the "State of Michigan, Department of Transportation (MDOT), Standard Specifications for Construction" (2003 Edition) manual, as applicable, unless otherwise amended herein.

1.02 The Agency will provide the following Work:

1.02.01 State Salvage: The State reserves the right to salvage certain items and equipment and those salvaged items will be identified to the Bidder at the time of their inspection of the proposed Work. The State will remove salvaged items before commencement of the Work.

1.02.02. Moving Furnishings and Equipment: The Contractor must give timely notice to the State Agency representative identified in the pre-construction meeting of all furnishings, window covering and movable equipment that will interfere with the Work or which the Contractor cannot protect with coverings of paper, plastic, drop cloths or clean tarpaulin. The Contractor must furnish, install, maintain and remove all coverings used to protect furnishings, window coverings and movable equipment.

SECTION 01020 ALLOWANCES – Not Applicable To This Project.

SECTION 01025 MEASUREMENT AND PAYMENT

I. GENERAL:

A. Schedule of Values: Before the first application for payment, the Contractor must submit a Schedule of Values to the Professional for review and approval, of the various tasks that must be performed to complete all the Work. The schedule must show each task and the corresponding value of the task, including separate monies allocated for General Condition items and Project close-out. The aggregate total value for all tasks must be equal to the total Contract sum.

SECTION 01030 ALTERNATES - DEDUCTIVE ALTERNATE #1:

I. GENERAL

A. The Base Bid Sum is solicited and the amount is to be inserted by the Bidder in the Blank space provided on the BID SUMMARY FORM. The Base Bid amount will include all portions of work as shown on the drawings and specified herein. Award of Contract, if made, will be to the Bidder whose Base Proposal Sum is to the best interest of the State.

Deductive Alternate #1:

Deduct all labor, materials, equipment, expenses, etc., for the furnishing and installing of the fifty (50) fish habitat bundles as shown on the drawings.

II. BASIS OF AWARD OF CONTRACT

A. Award of contract will be based solely upon the lowest Base Bid Sum submitted by a responsible and responsive Bidder. Should such a bid exceed available funding, the Owner reserves the right to award the contract based upon the lowest figure resulting from the Base Bid Sums with their respective Deductive Alternate #1 figures applied, provided that the figure does not exceed available funding and the bid was also submitted by a responsible and responsive Bidder.

SECTION 01040 COORDINATION

1. GENERAL:

1.01 Project Coordination:

1.01.01 Before beginning Work the Contractor must coordinate with the State Agency representative to implement the schedule for the Project. Once the Project is started, it must be carried to completion without delay.

1.01.02 Any building utility service interruptions or outages including security required by the Contractor in performing the Work must be prearranged with the staff of the State Agency and must occur only during those scheduled times.

1.01.03 The Contractor is not responsible for removing room furnishings unless is required by the Contract Documents.

1.02 Cutting and Patching:

- 1.02.01 The Contractor must do all cutting, fitting or patching of the Work that may be required to make its several parts fit together properly or make new Work join with the existing structure. The Contractor must take proper precautions so as not to endanger any existing Work. The Contractor must not cut or alter existing structural members or foundations unless specifically required by the Contract Documents.
- 1.02.02 Holes or openings cut in exterior walls and roofs for installation of materials or equipment must be waterproofed by appropriate, approved materials and methods.
- 1.02.02 All adjacent finished surfaces that are damaged by the new Work must be patched with materials matching existing surfaces. Joints between patched and existing material must be straight, smooth and flush. Workers skilled in its installation must apply all patching material.

SECTION 01050 FIELD ENGINEERING AND LAYOUT

1. GENERAL:

- 1.01 When applicable, the Contractor must establish and maintain all lines and levels required for laying out and constructing the Work. The Contractor agrees to assume all responsibility due to inaccuracy of any Work, and including incorrect bench marks, their loss or disturbance. Upon completion of the Project, the Contractor must submit two copies of site layout Drawings prepared for the Project and certified by the surveyor.

SECTION 01060 REGULATORY REQUIREMENTS

1..GENERAL:

1.01. Regulations:

- 1.01.01 **Laws:** The Contractor and its Subcontractors/Suppliers must comply with all Federal, State and local Laws applicable to the Work and site.
- 1.01.02 **Codes:** All Works must be provided in accordance with the State Construction Code Act, 1972 PA 230, as amended, MCL 125.1501 et seq., International Building and Residential Codes and all applicable Michigan construction codes and fire safety including but not limited to: Michigan Building Code, Michigan Residential Code, Michigan Uniform Energy Code, Michigan Electrical Code, Michigan Rehabilitation Code for Existing Buildings, Michigan Mechanical Code, Michigan Elevator Code and Michigan Plumbing Code. If the Contractor observes that any Contract Document conflicts with any Laws or the State Construction Code or any permits in any respect, the Contractor must promptly notify the Professional in writing. If the Contractor provides any Work knowing or having to reason to know of such conflict, the Contractor must be responsible for that performance.
- 1.01.03 **Permits:** All required construction permits must be secured and their fees including inspection costs must be paid by the Contractor. The time incurred by the Contractor in obtaining construction permits must constitute time required to complete the Work and does not justify any increases to the Contract Time or Price, except when revisions to the Drawings and/or Specifications required by the permitting authority cause the Delays. The Contractor must pay all charges of Public Utilities for connections to the Work, unless otherwise provided by Cash Allowances specific to those connections.
- 1.01.04 **Taxes:** The Contractor must pay all Michigan sales and use taxes and any other similar taxes covering the Work that are currently imposed by legislative enactment and as administered by the Michigan Department of Treasury, Revenue Division. If the Contractor is not required to pay or bear the burden or obtains a refund of any taxes deemed to have been included in the Bid and Contract Price, the Contract Price must be reduced by a like amount and that amount, whether as a refund or otherwise, must ensure solely to the benefit of the State of Michigan.
- 1.01.05 **Safety and Protection:** The Contractor and its Subcontractors/Suppliers must comply with all applicable Federal, State and local Laws governing the safety and protection of persons or property, including, but not limited to the Michigan Occupational Safety and Health Act (MIOSHA), 1974 PA 154, as amended, MCL 408.1001 et seq., and all rules promulgated under the Act. The Contractor is responsible for all damages, injury or loss to the Work, materials, equipment, fines, penalties as a result of any violation of such Laws, except when it's due to the fault of the Drawings or Specifications or to the Act, error or omission of the Owner or Professional. The Contractor is solely responsible for initiating, maintaining and supervising all safety precautions and programs and such responsibility must continue until such time as the Professional is satisfied that the Work, or Work inspected, is completed and ready for final payment.

In doing the Work and/or in the event of using explosives, the Contractor must take all necessary precautions for the safety of, and must erect and maintain all necessary safeguards and provide the necessary protection to prevent damage, injury or loss to: (a) all employees on the Work and other persons who may be affected by the Work, (b) all the Work and materials and equipment to be incorporated into the Work, whether stored on or off the site, and (c) other property at or adjacent to the site, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Utilities not designated for removal, relocation or replacement. In the event of severe weather, the Contractor must inspect the Work and the site and take all reasonably necessary actions and precautions to protect the Work and ensure that public access and safety are maintained.

- 1.01.06 **Michigan Right-To-Know Law:** The Contractor and its Subcontractors/Suppliers must comply with MIOSHA, Michigan Right-to-Know Law, Public Act 80 of 1986 (Act) and the rules promulgated under it. The Act places certain requirements on employers to develop a communication program designed to safeguard the handling of hazardous chemicals through labeling of chemical containers and development and availability of Material Safety Data Sheets (MSDS), and to provide training for employees who work with these chemicals and develop a written hazard communications program.
The Act also provides for specific employee rights, including the right to be notified of the location of MSDS and to be notified at the site of new or revised MSDS within five Business Days after receipt and to request MSDS copies from their employers. The Contractor, employer or Subcontractor must post and update these notices at the site.
- 1.01.07 **Environmental Requirements:** The Contractor and its Subcontractors/Suppliers must comply with all applicable Federal, State and local environmental Laws, standards, orders or requirements including but not limited to the National Environmental Policy Act of 1969, as amended, Michigan Natural Resources and Environmental Protection Act, P.A. 451 of 1994, as amended, the Clean Air Act, as amended, the Clean Water Act, as amended, the Safe Drinking Water Act, as amended, Pollution Prevention Act, as amended, Resource Conservation and Recovery Act, as amended, National Historic Preservation Act, as amended and Energy Policy and Conservation Act and Energy Standards for Buildings Except Low-Rise Residential Buildings, ANSI/ASHRAE/IESNA Standard 90.1-1999.
- 1.01.08 **Nondiscrimination:** For all State Contracts for goods or services in amount of \$5,000 or more, or for Contracts entered into with parties employing three or more employees; in connection with the performance of Work under this Contract, the Contractor and its Subcontractors and Suppliers must comply with the following requirements:
- 1.01.09 Not to discriminate against any employee or applicant for employment because of race, color, religion, national origin, age, sex, height, weight or marital status and take affirmative action to ensure that applicants are employed and the employees are not subject to such discrimination. Such action must include, but is not be limited to, the following: employment, upgrading, demotion or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training.
- 1.01.10 To state in all solicitations or advertisements for employees that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, age, sex, height, weight or marital status.
- 1.01.11 To send, or have its collective bargaining representative send, each labor union or representative of workers with which there is a collective bargaining agreement or other contract or understanding, a notice advising the labor unions or workers' representative of the commitments under this provision.
- 1.01.12 To comply with the Elliot-Larsen Civil Rights Act, 1976 PA 453, as amended , MCL 37.2201 et seq.; the Michigan Persons With Disability Civil Rights Act, 1976 PA 220, as amended, MCL 37.1101 et Seq.; and all published rules, regulations, directives, and orders of the Michigan Civil Rights Commission (MCRC) which may be in effect on or before the date of Bid opening.
- 1.01.13 The Contractor must furnish and file compliance reports within the times, and using the forms prescribed by the MCRC. Compliance report forms may also elicit information as to the practices, policies, programs, and employment statistics of the Contractor and Subcontractors. The Contractor must permit access to Records by the MCRC and its agent for purposes of ascertaining compliance with the Contract and with rules, regulations, and orders of the MCRC.
- 1.01.14 If, after a hearing held under its rules, the MCRC finds that the Contractor has not complied with the nondiscrimination requirements of the Contract Documents, MCRC may, as part of its order, certify its findings to the Administrative Board of the State of Michigan, which may order the cancellation of the Contract and/or declare the Contractor ineligible for future contracts with the State until the Contractor complies with the MCRC's order.
- 1.01.15 **Michigan Residency for Employees:** Fifty percent of the persons employed on the Work by the Contractor must have been residents of the State of Michigan for not less than one year before beginning employment on the Work. This residency requirement may be reduced or waived to the extent that Michigan residents are not available or to the extent necessary to comply with the federal funds used for the Project. This requirement does not apply to employers who are signatories to collective bargaining agreements that allow for the portability of employees on an interstate basis.

SECTION 01090 REFERENCES

1. GENERAL:

1.01 References will be made in an abbreviated alpha numeric form to specific standard specifications, reference publications and building codes of federal or state agencies, manufacturers, associations or trade organizations. Such references will be identified by the alphabetic abbreviation which identifies the government agency, the association or organization followed by the rule, section or detail number that are to form a part of these specifications, the same as if fully set forth herein, and must be of latest issued date in effect three months before the Bid opening date shown on the Proposal and Contract. The abbreviations used are referred to as follows:

<u>Abbreviation</u>	<u>Agency, Association or Organization</u>
ACI	American Concrete Institute
AISC	American Institute of Steel Construction, Inc.
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute, Inc.
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineering
ASTM	American Society of Testing and Materials
AWS	American Welding Society
AWWA	American Water Works Association
BOCA	Building Officials and Code
CDA	Copper Development Assn., Inc.
CLFMI	Chain Link Fence Manufacturer's Institute
CISPI	Cast Iron Soil Pipe Institute
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard
F/M	Factory Mutual Research Corporation
FS	Federal Specifications
HEW	United States Department of Health Education and Welfare
MDOT	Michigan Department of Transportation
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation Testing Laboratory, Inc
NSWMA	National Solid Waste Management Association
PCA	Portland Cement Association
PDI	Plumbing and Drainage Institute
SMACNA	Sheet Metal & Air Conditioning Contractors
UL	Underwriters Laboratories, Inc.
USBM	United States Bureau of Mines
USDC	United States Department of Commerce

SECTION 01100 SPECIAL PROJECT PROCEDURES

1. GENERAL:

1.01 The Contractor must post appropriate construction signs to advise the occupants and visitors of occupied facilities of the limits of construction work areas, hardhat areas, excavations, construction parking and staging areas, etc. The Contractor must maintain safe and adequate pedestrian and vehicular access to fire hydrants, commercial and industrial establishments, churches, schools, parking lots, hospitals, fire and police stations and like establishments. The Contractor must obtain written approval from the Owner ten Calendar Days before connecting to existing facilities or interrupting the services on site.

1.02 Barrier and Enclosures:

1.02.01 The Contractor must furnish, install and maintain as long as necessary and remove when no longer required adequate barriers, warning signs or lights at all dangerous points throughout the Work for protection of property, workers and the public. The Contractor must hold the State of Michigan harmless from damage or claims arising out of any injury or damage that may be sustained by any person or persons as a result of the Work under the Contract.

1.02.02 Temporary Fence: The Contractor must entirely enclose the Contract area by means of woven wire or snow fence having minimum height of four feet. Gates must be provided at all points of access. Gates must be closed and secured in place at all times when Work under the Contract is not in progress.

The fence must be removed and grounds restored to original condition upon completion of the Work. Extruded orange polyethylene snow fence is acceptable for this project.

- 1.02.03 Street Barricades: The Contractor must erect and maintain all street barricades, signal lights and lane change markers during the periods that a traffic lane is closed for their operations. There must be full compliance with rules and ordinances respecting such street barricading and devices must be removed when hazard is no longer present.

2. Construction Aids:

2.01 The Contractor must furnish, install, and maintain as long as necessary and remove when no longer required, safe and adequate scaffolding, ladders, staging, platforms, chutes, railings, hoisting equipment, etc., as required for proper execution of the Work. All construction aids must conform to Federal, State, and local codes or Laws for protection of workers and the public.

2.02 Debris Chute: The Contractor must use a chute to lower debris resulting from their Work. The chute must be the enclosed type with its discharge directly into the truck or approved container.

2.03. Pumping and Drainage: The Contractor must provide all pumping necessary to keep excavations and trenches free from water the entire period of Work on the Contract. The Contractor must construct and maintain any necessary surface drainage systems on the Work site so as to prevent water entering existing structures or to flow onto public or private property adjacent to the Agency's land, except for existing drainage courses or into existing drainage systems. The Contractor must prevent erosion of soils and blockage of any existing drainage system.

SECTION 01200 PROJECT MEETINGS

1. GENERAL:

1.01 Pre-Construction Conferences: The Project Director will schedule a pre-construction conference to be attended by the Professional, State Agency staff, and the Contractors. A project procedure as outlined in DMB-460 Form, will be established for the Work during the pre-construction meeting. When no organizational meeting is called, the Contractor, before beginning any Work, must meet with the staff of the Agency and arrange a Work schedule for the Project. Once the Project has been started, the Contractor must carry it to completion without delay.

1.02 Progress Meetings: The Professional will schedule progress meetings to be held on the job site whenever needed to supply information necessary to prevent job interruptions, to observe the Work or to inspect completed Work. The Contractor must be represented at each progress meeting by persons with full authority to act for the Contractor in regard to all portions of the Work.

SECTION 01300 SUBMITTALS

1. GENERAL:

1.01. Within 20 days of notice of award of Contract and prior to the delivery of any material or equipment to the job site, the Contractor shall submit to the Professional, a complete list of material suppliers, subcontractors, and brand names of all materials proposed to be used in the project. The Contractor shall check and verify all field measurements. Thereafter the Contractor shall submit to the Professional with such promptness as to cause no delay in the Work, a minimum of three (3) copies of Shop Drawings, product data catalogs, material schedules, etc. Following examination by the Professional, three copies will be retained for Owner's use and remaining copies will be returned to the Contractor with indication of approval or with notations for correction.

1.02 Samples: The Contractor must deliver all samples of material or equipment to the job site for examination by the State Agency and the Professional. Samples will be examined by the Professional for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents. The Contractor must furnish all Work in accordance with approved samples. The following general classifications of material and equipment require submission of samples. Samples of other items may be requested by the Professional at any time.

1.03 Shop Drawings, Sample and Technical: Contractor must submit to the Professional blue line drawings of all Shop Drawings; (b)A 3-inch wide by 2-inch high clear space for State approval stamp must be provided on the Title Sheet of the shop drawings; (c) all required samples; and (d) all other technical submittals (test, results, test and safety procedures, O&M manuals, etc.) that are required by the Contract Documents. Each submittal must be stamped/certified/signed to indicate that the Contractor has complied with the requirements of the Contract Documents, building codes, etc. Submittals must be coordinated, reviewed and stamped/approved by the Contractor before submission to the Professional. Before each submission, the Contractor must (a) determine and verify all field measurements, quantities, dimensions, instructions for installation and handling of equipment and systems, installation requirements (including location, dimensions, access, fit, completeness, etc.), materials, color, catalog numbers and other similar data as to correctness and completeness, and (b) have reviewed and coordinated that technical Submittal with other technical submittals and the requirements of the Contract Documents.

The Contractor must give the Professional specific written notice of any variation from the requirements of the Contract Documents. Neither the Owner’s authority to review any of the Submittals by the Contractor, nor the Owner’s decision to raise or not to raise any objections about the Submittals, creates or imposes any duty or responsibility on the Owner to exercise any such authority or decision for the benefit of the Contractor/Subcontractor/Supplier, any surety to any of them or any other third party. The Contractor is not relieved of responsibility for errors or omissions in shop drawings, product data, samples, or similar submittals just because the Professional approved them. The finalized As-Built/Record Documents/O & M manuals and any other approved Submittals must be submitted to the Professional prior to processing final payment to the Contractor.

1.04 Progress Schedule: Upon request, the Contractor must submit three (3) copies of the Progress Schedule for the Professional and Owner review. The Progress Schedule Submittals are intended to show: (a) the priority and sequencing by which the Contractor intends to execute the Work (or Work remaining) to comply with Contract Times, those sequences of Work indicated in or required by the Contract Documents; (b) how the Contractor anticipates foreseeable events, site conditions and all other general, local and prevailing conditions that may in any manner affect cost, progress, schedule, performance and furnishing of the Work; and (c) how the Means and Methods chosen by the Contractor translate into activities and sequencing; and (d) the actual timing and sequencing of completed Work. Submittals will be returned to the Contractor within fifteen Calendar Days. Contractor must resolve the issues arising from the review by the Professional and/or the Owner and submit Progress Schedule Revision. The review of the Progress Schedule by the Professional or the Owner does not create or impose on the Owner or the Professional any responsibility for the timing, planning, scheduling or execution of the Work or the correctness of any such Progress Schedule detail. The Contractor must update the schedule monthly. The correctness of Progress Schedule remains the sole responsibility of the Contractor. The Contractor is responsible for any time Delay and any cost incurred by the Professional, Contractor or Subcontractors/Suppliers as a result of resubmissions and re-reviews of a particular Submittal.

SECTION 01400 QUALITY CONTROL

1. GENERAL:

1.01 Testing Laboratory Services: All tests required by the Owner must fulfill ASTM, ANSI, Commercial and other Standards for testing. The Contractor must submit a minimum of three copies of each test report to the Professional for evaluation and subsequent distribution. The following general classifications of Work require submission of test reports and/or certificates of inspection. Additional submissions may be requested by the Professional at any time.

<u>Item of Work</u>	<u>Test Type</u>	<u>Section Number</u>
Earth Work	Compaction and Density	02300
Sheet Piling	Tensile Strength, Point of Rejection	02484
Cast-In-Place Concrete	Compression Tests	03300

1.02 Concrete/Asphalt Materials: Before placement of any concrete, the Contractor must submit for the Professional's approval complete data on the trial concrete mix formulation and a testing laboratory report for ASTM C94, twenty-eight-day standard cylinder test for compressive strength of a sample of the concrete mix. For asphalt paving, the Contractor must submit the data and testing reports for ASTM D946, AC-5. The mix must have 4.5 to 6 percent of asphalt cement by weight for binder course and 5 to 7 percent of asphalt cement by weight for surface course in accordance with Asphalt Institute Manual MS-4, MS-13 and the current Michigan Department of Transportation (MDOT) Standard Specifications for Construction.

- 1.02.01 The Contractor must furnish to the Professional tickets showing mix formulation, Contractor's name, Project name, mix identification for each load of concrete/asphalt delivered and installed. If the technical specifications allow added water to the concrete mix after leaving the batch plant, the delivery ticket must reflect the added water. The Owner Field Representative must receive a copy of each delivery ticket for transmittal to the Professional for evaluation.
- 1.02.02 The Professional may require the Contractor to core drill questionable cast-in-place concrete/asphalt for laboratory testing. Should the laboratory analysis indicate the concrete/asphalt fails to meet specification requirements, the Contractor must pay all costs for core drilling and testing in the laboratory and replace the concrete/asphalt found to fail meeting the specification requirements. Should the laboratory analysis confirm that the concrete/asphalt meets specification requirements, the Owner will pay the Contractor for their costs for core drilling, concrete/asphalt patching and the laboratory fee for testing of the concrete/asphalt core samples.

SECTION 01500 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1. GENERAL:

1.01 The Contractor must furnish and install all temporary facilities and controls required by the Work, must remove them from State property upon completion of the Work, and the grounds and existing facilities must be restored to their original condition.

1.02 Water or electricity are not available in the area where Work will be performed. The Contractor must pay costs for installation and removal of any temporary connections including necessary safety devices and controls. Use of services must not disrupt or interfere with operations of the State Agency.

1.03 Temporary Sanitary Facilities:

1.03.01 State Toilets: The State Unit will designate a permanent vault toilet facility on the premises for use by personnel employed in the Work. The Contractor shall repair any damage to the toilet facility caused by his/her employees.

1.04 Field Office:

1.03.02 An on-site field office will not be required for this project.

SECTION 01600 MATERIAL AND EQUIPMENT

1. GENERAL:

1.01 The Contractor must furnish and be responsible for all materials, equipment, facilities, tools, supplies and utilities necessary for completing the Work. All materials and equipment must be provided as described in the Contract Documents and of good quality, free of defect and new and must be applied, installed, connected, erected, used, cleaned and conditioned following the manufacturer's and Suppliers' instructions.

1.02 Delivery, Storage, and Handling: All materials and equipment delivered to and used in the Work must be suitably stored and protected from the elements. The areas used for storage must only be those approved by the State Agency. The Owner assumes no responsibility for stored material. The ownership and title to materials will not be vested in the Owner before materials are incorporated in the Work, unless payment is made by the Owner for stored materials and equipment. After delivery, before and after installation, the Contractor must protect materials and equipment against theft, injury or damage from all causes. For all materials and equipment, the Contractor must provide complete information on installation, operation and preventive maintenance.

1.02.01 The Contractor must cover and protect bulk materials while in storage which are subject to deterioration because of dampness, the weather or contamination. The Contractor must keep materials in their original sealed containers, unopened, with labels plainly indicating manufacturer's name, brand, type and grade of material and must immediately remove from the Work site containers which are broken, opened, watermarked and/or contain caked, lumpy or otherwise damaged materials.

1.02.02 The Contractor must keep equipment stored outdoors from contact with the ground, away from areas subject to flooding and covered with weatherproof plastic sheeting or tarpaulins.

The Contractor must certify that any materials stored off-site are:

- a) Stored on property owned or leased by the Contractor or owned by the agency.
- b) Insured against loss by fire, theft, flood or other hazards.
- c) Properly stored and protected against loss or damage.
- d) In compliance with the plans and specifications.
- e) Specifically allotted, identified, and reserved for the project.
- f) Itemized for tracking and payment.
- g) Subject to these conditions until the items are delivered to the project site.

SECTION 01650 FACILITY START-UP

1. GENERAL:

1.01 Tests: The complete installation consisting of the several parts of equipment and systems installed according to the requirements of the Contract Documents must be ready in all respects for use by the State Agency and must be subjected to a test at full operating conditions and pressures for normal conditions of use.

1.02 Adjustments: Contractor must adjust and replace the Work which is necessary to fulfill the requirements of the Contract Documents and to comply with the directions and recommendations of the manufacturer of the several parts of equipment, and to comply with all provisions of architectural and/or engineering drawings/specifications and all codes and regulations which may apply to the entire installation.

1.03 Demonstration: Contractor must provide an on-site demonstration and training of all systems operations to the Owner when it is substantially completed.

SECTION 01700 CONTRACT CLOSE-OUT

1. GENERAL:

1.01 Substantial Completion: The Contractor must notify the Professional, the Project Director and the Agency when the Work will be substantially complete. If the Professional, Owner, and Agency agree that the project is Substantially Complete, the Professional and Project Director will inspect the Work. The Professional, upon determining that the Work, or a portion of the Work inspected, is substantially complete, will prepare a Punch List and will attach it to the respective Certificate of Substantial Completion. The Contractor must be represented on the job site at the time this inspection is made and thereafter must complete all Work by the date set for final acceptance by the Owner.

1.02 Cleaning:

1.02.01 Regular Cleaning: The Contractor must remove all scrap or removed material, debris or rubbish from the Project work site at the end of each working day and more frequently whenever the Owner Field Representative deems such material to be a hazard. The Contractor cannot discard materials on the grounds of the State Agency without the express permission of the Project Director. No salvage or surplus material may be sold on the premises of the State Agency. No burning of debris or rubbish is allowed. Any recycled materials must be recycled and the Contractor will be required to provide recycling plan.

1.02.02 Final Cleaning: Before final acceptance by the State, the Contractor must clean all of the Work and existing surfaces, building elements and contents that were soiled by their operations and make repairs for any damage or blemish that was caused by the Work.

SECTION 01800 MAINTENANCE - Not Applicable To This Project.

END OF DIVISION 01

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

ADDITITVE ALTERNATES

ADDITIVE ALTERNATE #1 - Add fish habitat bundles to the contract work as shown and specified on the plans.

ADDITIVE ALTERNATE #2 - Delete natural wood decking material from gangway and fishing pier and Add recycled plastic decking material as specified. Note: Added work to include and required modifications to the pier substructure.

ADDITIVE ALTERNATE #3 - Delete 6" and 9" thick reinforced concrete walk and add 6" thick pervious concrete section as shown and specified. Added work to include drainage layer materials and associated work. Added work includes modifying bench, grill, picnic table and upland sign to be embedment type installations. Note: Abutment cap to remain reinforced concrete as shown and specified.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

TABLE OF CONTENTS

DIVISION 2 SITE WORK

02000	Mobilization
02200	Soil Erosion and Sediment Control
02230	Site Clearing
02300	Earthwork
02481	Dredging
02484	Sheetpile
02752	Pervious Concrete – Additive Alternate #2
02800	Site Furnishings
02891	Floating Fishing Pier
02900	Restoration
02920	Lawns & Grasses

DIVISION 3 CONCRETE

03300	Cast-In-Place Concrete
-------	------------------------

DIVISION 6 WOOD & PLASTICS

06730	Composite Wood Decking – Additive Alternate #3
-------	--

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

DIVISION TWO – SITE WORK

MOBILIZATION

SECTION 02000

PART 1 - PART ONE – GENERAL

1.1 Description

- A. This item shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel equipment, supplies, and incidentals to the project site; for the establishment of the contractor's offices, buildings, and other facilities necessary to undertake the work on the project; and for other work operations which must be performed, or for expenses incurred, prior to beginning work on the various contract items on the project site.

1.2 Method of Payment

- A. Mobilization shall be paid for at the Contract Unit Price per Lump Sum and shall include all work required to mobilize and demobilize.

END OF SECTION

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- a. Contractor shall submit a detailed schedule of installation, maintenance and removal dates for all required SESC measures. A schedule form is included at the end of this section.
- 3. Maintenance procedures for Temporary SESC Measures.
- 4. Maintenance Procedures for Permanent SESC measures.
 - a. Contractor will be responsible to maintain these measures until they are permanently established and the soil is stabilized.

1.03 RELATED SPECIFICATIONS

- A. Section 02920 LAWNS AND GRASSES

PART TWO - MATERIALS

2.01 GENERAL

- A. All materials required for the SESC measures shall be as specified by the MDMB Soil Erosion and Sedimentation Control Guidebook 2002, and by Section 916, and Section 917 of the MDOT Standard Specifications for Construction, 1996 Edition.
- B. Seed Mulch shall be as specified in Section 02900

PART THREE - EXECUTION

3.01 INSTALLATION AND MAINTENANCE OF CONTROLS

- A. General
 - 1. All SESC measures shown on the plans shall be installed and maintained in accordance with the MDMB Soil Erosion and Sedimentation Control Guidebook 2002, unless otherwise specified or approved by the Engineer.
 - 2. All required SESC measures shall be in place as required by the approved SESC plan prior to construction.
 - 3. Daily inspections shall be made by the contractor to determine effectiveness of erosion and sedimentation measures, and any necessary repairs shall be performed without delay.
 - 4. Permanent soil erosion control measures over disturbed land area shall be completed within 5 working days after final grading or final earth change has been completed.
- B. Silt Fence
 - 1. Install silt fence as shown in the approved SESC plan and in accordance with the MDMB Soil Erosion and Sedimentation Control Guidebook 2002, unless otherwise shown on the plans or approved by the Engineer.
- C. Dust Control
 - 1. Dust shall be in accordance with the MDMB Soil Erosion and Sedimentation Control Guidebook 2002.
- D. Sweeping
 - 1. All paved surfaces shall be swept as necessary to keep them free of sediment and vehicle tracking.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- E. Seeding and Mulching
 - 1. Seeding and mulching shall be in accordance with Section 02900 – Landscaping.

- F. Cellular Confinement
 - 1. Cellular confinement shall be in accordance with the MDMB Soil Erosion and Sedimentation Control Guidebook 2002.

3.02 COMPLETION

- A. The contract will not be considered complete until the Engineer has certified the following items.
 - 1. All disturbed soil is permanently stabilized.
 - 2. All sewers, ditches, catch basins, and manholes and roadways are cleaned and cleared of sediment. Unless the contractor can document positively to what extent these items are silted prior to construction, no credit will be given for cleaning these items.
 - 3. All temporary SESC measures have been removed and the areas are restored and stabilized.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

**SOIL EROSION AND SEDIMENTATION CONTROL MEASURES
INSTALLATION, MAINTENANCE AND REMOVAL SCHEDULE**

SESC MEASURE	INSTALLATION DATE	REMOVAL DATE	MAINTENANCE FREQUENCY

END OF SECTION

LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207

SECTION 02230

SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Protecting existing trees, shrubs, groundcovers, plants, and grass to remain.
2. Removing existing trees, shrubs, groundcovers, .plants and grass.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.

1.2 QUALITY ASSURANCE

A. The contractor shall insure that only those trees that are obstructing the work area are removed. Trees beyond the work area shall be protected.

B. Tree removal shall be done using only workmen skilled in this type of work.

1.3 MATERIAL OWNERSHIP

A. Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.4 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.

C. The contractor shall protect all existing utilities indicated or made known. Call "MISS-DIG" or other service as needed to identify utility locations. Utility line markers placed by the Architect/Engineer and MISS DIG shall be protected by the contractor and replaced at his expense.

D. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place. Requirements for erosion and sedimentation control measures are specified in Division 2, Section "Soil Erosion and Sedimentation Control."

LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207

1.5 METHOD OF PAYMENT

- A. All work under this section is included in the contract lump sum price. No separate payments will be made for this work.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified in Division 2, Section "Earth Moving."
 - 1. Obtain approved borrow soil materials off-site when satisfactory soil materials are not available on-site.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. The Contractor shall thoroughly inspect the premises prior to commencing work. The Contractor shall also determine the extent of work and the number and size of trees to be removed.

3.2 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Protect existing site improvements to remain from damage during construction.
 - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.3 TREE PROTECTION

- A. Extreme care should be taken to avoid damage to trees including seedlings and saplings. No damage is acceptable to existing trees with in the park (defined as breaking of the bark, broken tops or bending of trees from their natural position). All trees 3" diameter caliper or greater incurring bark damage during construction shall be addressed by the contractor by removing the damaged bark with a neat clean cut to a point on the tree trunk where the bark is undamaged. The repair shall be uniform in appearance and minimize the removal of any bark not damaged. All broken tree limbs shall be neatly trimmed at a branch joint or at the trunk of the tree. All damaged and exposed tree roots over 1/4" in diameter shall be neatly trimmed prior to backfill placement.
- B. Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.
- C. Do not excavate within tree protection zones, unless otherwise indicated.

LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207

- D. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Engineer.

3.4 UTILITIES

- A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.
 - 1. Arrange with utility companies to shut off indicated utilities.
 - 2. Notify Engineer not less than two days in advance of proposed utility interruptions.
 - 3. Utility lines which have been identified on the plans or on-site and then are damaged or disturbed by the contractor shall be repaired or replaced at no expense to the state.

3.5 CLEARING AND GRUBBING

- A. The contractor shall take care when removing trees to avoid damaging existing structures, roads, utilities, other trees, and state property. Tree removal shall be done only when all campsites within 300 feet of the work area have been vacated. The contractor shall insure that non-construction employees are kept clear of the removal area at all times.
- B. Where trees indicated to be removed cannot be felled without danger to other trees, structures or property, they shall be cut down in sections.
- C. Tree roots 1" in diameter and larger shall be removed to the trench depth required for the utility installation. In areas where pavement is to be constructed tree roots shall be removed to at least 12" below the existing ground surface or sub-grade of new graded surface, whichever is lower.
- D. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
 - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.6 TOPSOIL STRIPPING

- A. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
- B. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.
- C. DISPOSAL
 - 1. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
 - 2. All brush, tree branches, roots, and tree stumps shall be removed from the state park and disposed of off site. Non-vegetative material shall be removed from state park lands and

LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207

disposed of in an approved landfill. Debris will not be allowed to accumulate on the job site.

3. Burning of combustible materials will not be permitted on state park lands.

END OF SECTION 02230

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

SECTION 02300

EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
1. Preparing subgrades for slabs-on-grade, walks, pavements, lawns and grasses.
 2. Excavating and backfilling for buildings and structures.
 3. Subbase course for concrete walks.
 4. Excavating and backfilling for utility trenches.

1.2 DEFINITIONS

- A. Backfill: Soil material used to fill an excavation.
1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.
- C. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- D. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions changes in the Work.
 2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
- E. Fill: Soil materials used to raise existing grades.
- F. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- G. Subbase Course: Course placed between the subgrade and a cement concrete pavement.
- H. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- I. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

1.3 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Granular Material shall meet MDOT Standard Specification (2003 Edition) Section 902.08 for Class II Material.
- E. Bedding Course: Granular Material shall meet MDOT Standard Specification (2003 Edition) Section 902.08 for Class II Material.
- F. Abutment Fill Material: Abutment fill material shall meet MDOT Standard Specification (2003 Edition) Section 902.07 for 6A Material.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Section 2050 Demolition.

3.2 EXCAVATION

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

3.3 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

3.4 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades. If required by site conditions, remove additional poor subbase materials as necessary to provide suitable base.

3.5 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.
 1. Clearance: 12 inches each side of pipe or conduit.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
 1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material, 4 inches deeper elsewhere, to allow for bedding course.

3.6 SUBGRADE INSPECTION

- A. Proof-roll subgrade below the building slabs and pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
- B. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

3.7 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Engineer.
 - 1. Fill unauthorized excavations under other construction or utility pipe as directed by Engineer.

3.8 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.9 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Division 03 Section "Cast-in-Place Concrete."
- D. Place and compact initial backfill material, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the utility pipe or conduit.
 - 1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- E. Place and compact final backfill of satisfactory soil to final subgrade elevation.

3.10 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
 - 1. Under grass and planted areas, use satisfactory soil material.
 - 2. Under walks and pavements, use satisfactory soil material.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

3.11 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.12 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:
 - 1. Under structures, building slabs, steps, and pavements, compact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
 - 2. Under walkways, compact top 6 inches below subgrade and each layer of backfill or fill soil material at 92 percent.
 - 3. Under lawn or unpaved areas, compact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
 - 4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.13 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 - 1. Lawn or Unpaved Areas: Plus or minus 1 inch.
 - 2. Walks: Plus or minus 1 inch.
 - 3. Pavements: Plus or minus 1/2 inch.
- C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.14 SUBBASE AND COURSES

- A. Place subbase course on subgrades free of mud, frost, snow, or ice.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- B. On prepared subgrade, place subbase course under pavements and walks as follows:
 - 1. Shape subbase course to required crown elevations and cross-slope grades.
 - 2. Compact subbase course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight.

3.15 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor will engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.
- B. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Engineer.
- C. Testing agency will test compaction of soils in place according to the Nuclear Density Method ASTM D 2922, or other approved method.
- D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

3.16 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.17 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

END OF SECTION

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

DIVISION TWO –SITE WORK

SECTION 02481

DREDGING

PART ONE - GENERAL

1.01 Description

- A. The work in this Section includes the furnishing of all plant, equipment, materials, supplies and labor necessary for dredging as shown on the plans, including dewatering, and disposal of all the dredged materials from the areas shown on the drawings and as specified herein. Work shall also include the furnishing of all plant, equipment, materials, supplies and labor required to prepare the dredge disposal site, properly transport and place the dredge materials on the disposal site as indicated in the specifications.
- B. The materials to be dredged consist predominantly of organic material, silt and sand, with some rocks and larger debris.

1.02 Quality Assurance

- A. Regulatory Requirements ...Copies of the following permits are appended to these specifications.
 - 1. Michigan Department of Environmental Quality – Land & Water permit. #09-42-0014P.
- B. Certifications
 - 1. The Contractor shall display the Department of Environmental Quality permit on site at all times and comply with the conditions of the permit.

1.03 Requirements

- A. Dredging shall be accomplished by mechanical means. All spoils must be placed in such a manner as to prevent their return to the water. Spoils shall be disposed of on property owned by the Department. Disposal shall comply with the MDEQ Land & Water Management Division permit. Placement and any grading or erosion control measures required by the Engineer shall be considered incidental to the work.
- B. The dimensions of the dredge areas shall be as shown on the plans. Side slopes shall be as indicated on the plans.

1.04 Measurement and Payment

- A. The contract drawings represent conditions as of June 2008. The contractor shall examine the site to determine if conditions have changed.
- B. The total amount of dredge material removed shall be paid by lump sum payment. The contractor shall complete final sweeping survey in the presence of the Engineer and in timely manner to insure that the area has been dredged to the plan depth. No additional payment will be made for dredging beyond the dredging limits as shown on the drawings.

PART TWO - PRODUCTS

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

2.01 Equipment

- A. Equipment used for dredging operations shall be satisfactory for doing the work, and must be approved by the Engineer prior to commencing dredging operations.

2.02 Turbidity Curtain

- A. Turbidity curtain shall be as manufactured by Floating silt curtain shall be FASTWATERSCREEN as manufactured by American Marine or equivalent. Fastwaterscreen distributed by CSI/GEOTURF, Inc. Highland, MI (800) 621-7007.

PART THREE - EXECUTION

3.01 Dredging Operations

A. Method of Dredging

1. Dredging to be done by mechanical means. It is the responsibility of the contractor to assure access to the work.
2. Undercut for contractor convenience or error shall not be paid for.
3. Contractor shall conduct dredging operations to minimize downwash of disturbed materials, and keep turbidity to a minimum.
4. Dredging methods must meet all requirements of Federal and State Codes, regulations and permit requirements.
5. Contractor shall conduct dredging and dewatering operations, and shall use controls necessary, to keep spoil materials from re-entering the lake or entering the neighboring properties or otherwise leaving the sites.
6. Spillage of leachate, water and dredge spoils onto roads will not be tolerated.
7. Wood, trees and boulders larger than 2 feet in greatest dimension, shall be separated from the dredge spoils and placed on site at the direction of the engineer.

B. Contractor use of the state boat launch ramp.

1. The boat ramp is designed for use by the public for launching and retrieving of recreational boats. Should the contractor wish to launch barge equipment, it is done at their own risk. Any damage to the launch ramp will be repaired to the satisfaction of the owner. The contractor shall obtain a use permit from the Fort Wilkins State Park Headquarters, Parks & Recreation Division @ 906-289-4215. Contractor shall inspect the ramp for existing conditions, prior to use and shall notify the Engineer of the time and date of the inspection. Provide a 3 day (working days) minimum notification to the Engineer so that they may attend the inspection.

3.02 Dredging Tolerances, Overdredging and Sweeping

A. Tolerances and Overdredging

1. The tolerances for dredging is from plus (+) 0' to minus (-) 0.5' from the limits of dredging as shown on the plans.
2. Dredging beyond the limits shown on the plans will be considered beyond the scope of the contract. Payment will not be made for overdredging.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

3. Dredging beyond that defined by the plans shall be only with the written permission of the engineer prior to commencing the additional work. Tolerances and payment for the additional dredging shall be the same as for the original dredging, within the new approved limits applied.
- B. Sweeping
1. It is the contractors responsibility to conduct such soundings as needed to assure compliance with the design depths and to determine completion of the work.
 2. The contractor shall perform sweeping operations, under the direction of the Engineer, to insure project depth. The Engineer shall be notified 48 hours prior to sweeping for check survey purposes. All materials required for sweeping shall be provided by the contractor. "Sweeping" shall be defined as a physical sweeping of the **entire dredged area** with a bar, pole or other device set at the proposed design dredge depth. Electronic depth measuring equipment may be used, provided the bottom coverage is complete and the device accuracy is verified with a physical depth check to the satisfaction of the Owner. Operations manuals and specifications shall be made available to the Owner for review. Spot elevation checks shall not be sufficient for this purpose.
 3. Upon completion of the work the contractor shall notify the owner. The contractor shall complete final sweeping survey in the presence of the owner to insure that the channel has been dredged to the plan depth. Owner will make the determination of compliance with the plans and specifications, based on the results of this sweeping. Any areas where the grade of dredging is above the project depth, the area shall be redredged.
 4. Should a second sweeping of the site be required because areas of the site require redredging, the contractor will be required to reimburse the owner for the additional time of inspection. If limited areas require correction by the contractor and in the owners judgment can be corrected without a follow-up survey, this requirement may be waived.
- 3.03 Cleaning
- A. The site shall be restored to original condition at no cost to the owner. All dredge spoils shall be removed from the site. Any grass areas disturbed by the contractor operations shall be regraded, seeded and mulched. Site restoration shall be considered incidental to the work and not paid for separately.
 - B. Damage to the boat launch ramp will be restored to original condition at no cost to the owner. Any existing damaged areas should be brought to the owners attention prior to the work.

END OF SECTION

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

SECTION 02484

STEEL SHEET PILE

PART ONE - GENERAL

1.01 SCOPE

- A. This work consists of furnishing and installing new steel sheeting and related items as shown on the plans and specified herein.

1.02 SUBMITTALS

- A. Mill reports...Contractor shall submit a certified copy of all mill reports covering the chemical and physical properties of new steel piling used in the work under this Section of the specifications.

PART TWO - PRODUCTS

2.01 NEW STEEL SHEET PILING

- A. General...Steel sheet piling shall conform to the requirements of ASTM A328 with a minimum yield strength of 36,000 psi.
- B. Sections...Piles shall be of the types indicated on the drawings and shall be of a design, such that when in place they will be continuously interlocked throughout their entire length. Connections/attachments/railing layout is based on Model L-41 of the Roll Form Group, Canadian Metal Rolling Mills. Should the Contractor provide sheeting materials by other mills, they shall make such modifications as required to the abutment design to meet the function proposed.
- C. The types and dimensions of the piles the Contractor proposes to furnish shall be submitted for approval, and no order for delivery of such piles shall be given by the Contractor prior to receipt of written approval of the Architect/Engineer. Piles shall have the properties listed in the following table.

PROPERTIES OF SECTIONS

<u>Thickness (in.)</u>	<u>Modulus (in³/ft wall)</u>	<u>Section Weight (lbs/ft²)</u>
0.164	3.30	9.17

- D. Each steel pile shall be free from any kinks and shall not possess camber, twist, or warp of a degree which will, in any manner, prevent easy and ready driving of a pile. The interlock of each pile shall be straight throughout its entire length and shall be of such shape and dimensions as will permit free and easy threading of the pile.
- E. Fabrication of special piles...The Contractor shall fabricate and furnish special corner piles as required. Special piles shall be constructed using plates and angles utilizing standard welding practices.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- F. Connectors...Nuts and washers and threaded tie rod shall be standard strength, conforming to ASTM A307 and be hot dipped galvanized.
- G. Welding Electrodes...E60 or E70 series.

2.02 PILE CAP

- A. General...Steel pile cap material shall conform to the requirements of ASTM A36.
- B. The types and dimension of the pile caps the Contractor proposes to furnish shall be submitted for approval, and no order for delivery of such pile caps shall be given by the Contractor prior to receipt of written approval of the Architect/Engineer. Piles caps shall meet the following: table.

PROPERTIES OF SECTION		
<u>Thickness (in.)</u>	<u>Modulus (in³/ft wall)</u>	<u>Section Weight (lbs/ft²)</u>
0.250	4.5	9.9

PART THREE - EXECUTION

3.01 CONSTRUCTION METHODS

- A. Removing Obstructions...Remove any hidden rocks or other items that would prevent driving of the proposed sheeting.
- B. Placing and Driving...Piles shall be carefully located as shown on the drawings and driven in a plumb position, each pile interlocked with adjoining piles for its entire length, so as to form a continuous diaphragm, throughout the length of each run of wall. The Contractor shall drive all piles as true to lines as practicable and shall provide suitable temporary walers or guide structures to insure that the piles are driven in correct alignment. All piles shall be driven to the depths shown on the drawings and shall extend to the elevations indicated for the tops of the piles. After driving the piles shall be cut off to the required top elevation as shown on the drawings. The tops of the piles shall all be at the required elevation after cutting off.
- C. The horizontal alignment of the sheet pile wall shall be within three (3) inches of the required location shown on the Plans
- D. Boulders and Obstructions...If boulders or obstructions are encountered they shall be removed, split, or dislodged to allow driving to continue.
- E. Alignment...Contractor to brace and hold in alignment sheet piling while driving.

3.02 OTHER STEEL WORK

- A. Pile cap shall be attached to each pile section in accordance with manufacturer's recommendation for this application.

END OF SECTION

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

SECTION 02751

PERVIOUS CEMENT CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. The Work contained in this Section is only required should the owner choose Additive Alternate #3.
- B. The Work described by this guide addresses the labor, materials and equipment necessary for construction of pervious concrete pavement, including subgrade testing and preparation for a stormwater storage layer for temporary detention or groundwater recharge in conformance with the plans, specifications and other contract documents, for streets, parking lots, driveways, paths.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Concrete materials:
 - 1. Proposed concrete mixture proportions including all material weights, volumes, density (unit weight), water-cement (cementitious ratio), and void content. If mix proportions are proprietary, a written submittal from the concrete supplier will be required documenting a minimum of two prior successful projects using the same mix design. The density, water to cement ratio, and void content is still required to be reported.
 - 2. Aggregate type, source and grading.
 - 3. Cement, supplementary cementitious materials and chemical admixture manufacturer certifications
- C. Aggregate base materials: Washed aggregate type, source, grading and void content (percent porosity).
- D. Qualifications: Evidence of qualifications listed under Quality Assurance in Section 1.03 of this guide, which should have accompanied initial bid.
- E. Project details: Specific plans including a jointing plan, details, schedule, construction procedures and quality control plan.
- F. Subcontractors: List all materials suppliers, subcontractors and testing laboratories to be used on the project.

1.3 TEST PANELS: Prior to construction, test panel(s) shall be placed, and approved by the Architect/Engineer. The Architect/Engineer may waive this requirement based on Contractor qualifications.

- A. Test panel(s) shall be constructed in accordance with the plans and specifications. Regardless of qualification, the contractor is to place two test panels, each a minimum 225 sft at the required project thickness, consolidated, jointed and cured using materials, equipment, and personnel proposed for the project, to demonstrate to the Architect/Engineer's satisfaction that

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

in-place densities can be achieved and a satisfactory pavement can be installed at the site location.

- B. Test panel(s) cost and removal, if necessary, shall be included as a line item in the contract proposal and contract. Test panels may be placed at any of the specified pervious concrete pavement locations on the project or at another test site.
- C. Quality: Test panels shall have acceptable surface finish, joint details, thickness, porosity and curing procedures and shall comply with the testing and acceptance standards listed in the Quality Control section of this specification. Test panels shall be tested for thickness in accordance with ASTM C 42; void content in accordance with ASTM C 138, Gravimetric Air Determination; (determine fresh density in accordance with ASTM C 29, Section 11, Jigging Procedure) and core density in accordance with ASTM C 140, paragraph 9.3.
- D. Satisfactory performance of the test panels shall be determined by:
 - 1. Compacted thickness no more than 1/4 in. less than specified thickness (T compacted > T specified - 1/4 in.)
 - 2. Void Structure: 15 % minimum; 25 % maximum
 - 3. Density +/- 5 lb/ft³ of the design weight. If measured void structure falls below 15 % or if measured thickness is greater than 1/4 in. less than specified thickness or if measured density falls less than 5 lb/ft³ below the design density, the test panel shall be removed at the Contractor's expense and disposed of in an approved landfill or recycling facility. If test panels are found to be satisfactory, they may be left in-place and included in the completed work, at no additional cost to the project.

1.4 PROJECT CONDITIONS

- A. Weather Restrictions
 - 1. The Contractor shall not place pervious concrete for pavement when the ambient temperature is 40 OF or lower, unless otherwise permitted in writing by the Architect/Engineer.
 - 2. The contractor shall not place pervious concrete for pavement when the ambient temperature is 90 'F or higher, unless otherwise permitted in writing by the Architect/Engineer.

1.5 QUALITY ASSURANCE

- A. The Bidder/Contractor shall submit evidence at time of bid submission, that 20% of the crew or at least one member (crew leader), whichever is greater, shall be certified through the NRMCA Pervious Concrete Contractor Certification program, or equal. The minimum number of certified individuals listed above, must be present on each pervious concrete placement, and a certified individual must be in charge of the placement crew and procedures.
- B. Bidder must provide evidence that at least one company employee is NRMCA Pervious Concrete Certified, and documentation of two successful pervious concrete pavement projects, each greater than 1,000 square foot, including but not limited to the following:
 - 1. Project name and address, owner name and contact information
 - 2. Test results including density (unit weight), void content and thickness
- C. This requirement may be waived by the Architect/Engineer provided the Bidder/Contractor demonstrates successful experience in the concrete industry and constructs test panel(s) for inspection and testing, per Section 1.06 of this guide. If the placing contractor and concrete

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

producer have insufficient experience with pervious concrete pavement (less than two successful projects), the placing contractor shall retain an experienced consultant to monitor production at the concrete plant, handling, and placement operations at the project, solely at the Contractor's expense.

- D. Contractor shall employ a qualified testing laboratory to certify materials provided:
1. The testing laboratory shall have its laboratory equipment and procedures inspected at intervals not to exceed 2 years by a qualified national authority as evidence of its competence to perform the required tests and material designs. Acceptable national authority will include the AASHTO Materials Reference Laboratory (AMRL) and/or the Cement and Concrete Reference Laboratory (CCRL), as appropriate. In addition, testing machines and equipment must be calibrated annually or more frequently by impartial means using devices of accuracy traceable to the National Bureau of Standards.
 2. In fields other than those covered by the referenced ASTM standards, the testing laboratory shall accept only those assignments which it is able to perform competently by use of its own personnel and equipment. Any work to be subcontracted must be to laboratories meeting the same criteria. The testing laboratory shall have demonstrated its competence in the applicable fields for a period of not less than 3 years.
 3. The inspection and testing services of the testing laboratory shall be under the direction of a full-time employee registered as a professional engineer in the State of Michigan. He shall have a minimum of 5 years of professional engineering experience in inspection and testing of concrete construction.

Testing costs shall be at the expense of the Contractor.

1.6 SPECIAL EQUIPMENT: Pervious concrete requires specific equipment for compaction and jointing. The concrete shall be jointed and compacted using the methods listed, or alternatives, as demonstrated and approved by the Architect/Engineer.

- A. Rolling compaction shall be achieved using a steel pipe roller that spans the width of the section placed and exerts a minimum vertical pressure of 10 psi on the concrete, or they may use an hydraulically actuated rotating, weighted, tube screed.
- B. Plate compaction (for small areas) shall be achieved using a standard soil plate compactor that has a base area of at least two square feet and exerts a minimum of 10 psi vertical pressure on the pavement surface through a temporary cover of a minimum of 3/4in. plywood.
- C. Contraction joints will be constructed in pervious pavements, by rolling, or forming. The sawing of joints is discouraged due to the sediment introduced into the pavement, and the increased probability of raveling along the joints. Rolled joints shall be formed using a "pizza cutter roller" to which a beveled fin with a minimum depth of 1/4the thickness of the slab has been attached around the circumference of a steel roller.

1.7 Pre-paving Conference

- A. A pre-paving conference with the Architect/Engineer shall be held within one week prior to beginning placement. The contractor shall have the pervious concrete supplier, the foreman and the entire concrete crew that will form and place the concrete in attendance at this meeting.
- B. As a guide for the meeting, the document Checklist for the Concrete Pre-Construction Conference (available from the National Ready Mixed Concrete Association or the American Society of Concrete Contractors) shall be used to review all requirements of the contract during

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

the meeting. Meeting emphasis shall be on how paving with pervious concrete differs from paving with conventional concrete.

- C. In addition, a pre-construction conference shall be held and/or notice shall be provided to all subcontractors, identifying the special precautions that are required when working around pervious concrete pavement.

PART 2 - PRODUCTS

2.1 BASE COARSE AGGREGATE FOR STORMWATER DETENTION OR GROUNDWATER RECHARGE BED

- A. Shall be uniformly graded, coarse aggregate, per MDOT 6A, ASTM No 57 or approved equal with a loss by wash of no more than 1.0%.
- B. Actual size(s) of washed, uniformly graded, coarse aggregate for stormwater detention layer (or groundwater recharge bed), shall be at contractor's option for best availability, percent voids for designed volume of water storage, and economics.
- C. For soils with infiltration rates in excess of 1.5 inches per hour, minimum total thickness of coarse aggregate for stormwater storage shall be 6 in. and shall include a perforated exfiltration pipe.

2.2 FILTER FABRIC - shall be a nonwoven geotextile, in accordance with ASTM D6767-02.

2.3 ISOLATION (EXPANSION) JOINT MATERIAL

- A. Shall be 1/4 in or 1/2 in. flexible foam expansion joint with relative density of 1.7 or higher, meeting ASTM D 4819-88, or vinyl expansion joint in compliance with ASTM D 1751 or ASTM D 1752.

2.4 CURING MATERIALS

- A. Polyethylene sheeting - the primary method of curing pervious concrete shall be the placement of a waterproof covering, consisting of a minimum of 6 mil thick polyethylene sheeting.
- B. Other moisture loss control - for prevention of moisture loss prior to the primary method of curing: Liquid membrane curing compounds may be used, but they do temporarily reduce initial porosity. Curing compounds must comply with ASTM C-309, Type 1, Class A unless otherwise approved by the Architect/Engineer, when applied at a rate of 200 sft per gallon.
- C. A soybean oil based sealer/water repellent reduces surface color markings from plastic sheeting, enhances strength and durability, but does not reduce porosity.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- 2.5 CEMENT: Portland cement Type 1, Type 11, Type III, or Type V, conforming to ASTM C 150 or Portland cement Type IP or IS conforming to ASTM C 595.
- 2.6 SUPPLEMENTARY CEMENTITIOUS MATERIALS:
- A. Fly ash conforming to ASTM C 618
 - B. Ground Granulated Blast-Furnace Slag conforming to ASTM C 989
- 2.7 ADMIXTURES:
- A. Air entraining admixtures meeting ASTM C 260
 - B. Chemical admixtures shall comply with ASTM C 494.
 - 1. Water reducing admixtures Type A, mid-range water reducing admixtures (MRWRA) or high range water reducing admixtures (HRWRA) Type F or G are permitted due to low water-cement (cementitious) ratios specified for pervious concrete.
 - 2. Hydration stabilizing admixtures meeting requirements of ASTM C 494 Type B retarding or Type D Water Reducing/Retarding admixtures are required. This stabilizer suspends cement hydration by forming a protective barrier around the cementitious particles, delaying the initial set. As the pervious concrete heats up in the truck, a standard retarder will not prevent premature hydration while the stabilizer will. The use of hot water during cold weather will require an increased dosage of Hydration Stabilizer.
- 2.8 AGGREGATES FOR PERVIOUS CONCRETE:
- A. Coarse Aggregate shall meet the grading and quality requirement of MDOT 17A, 25A, 26A, or 29A unless an alternate size or specification i.e. (ASTM C 33, ASHTO) for use, based on meeting the project requirements. [Data for proposed alternate material shall be submitted for approval per Section 1.05A of this guide. Fine aggregate complying with ASTM C33, if used, shall not exceed 3 ft³ per yd³.]
 - B. A combined coarse and fine aggregates gradation shall be provided and a minimum of 10% of the material shall pass the #4 sieve. (Evidence suggests that the inclusion of additional sand increases the freeze thaw resistance/durability while still allowing adequate porosity.)
 - C. Larger aggregate sizes may increase porosity but can decrease workability and strength. Well graded aggregates shall be avoided as they may reduce porosity, and may not provide adequate void content.
 - D. Where available, natural rounded aggregates are recommended.
- 2.9 WATER - Water shall be potable and comply with ASTM C 1602.
- 2.10 FIBER REINFORCEMENT - fiber reinforcement shall comply with ASTM C 1116.
- 2.11 MIXTURE PROPORTIONS - The Contractor shall furnish a proposed mix design, with proportions of materials, or if mix proportions are proprietary, a written submittal from the

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

concrete supplier, prior to commencement of work. The data shall include densities determined in accordance with ASTM C 29 section 11, Jigging Procedure. The composition of the proposed concrete mixture shall be submitted to the Architect/Engineer for review and/or approval and shall comply with the following provisions unless an alternative composition is demonstrated to comply with the project requirements. Mixture performance will be affected by the properties of the particular materials used. Trial mixtures must be tested to establish proper proportions and determine expected behavior. Concrete producers may have mixture proportions for pervious concrete optimized for performance with local materials. Appendix 6 of ACI 211.3R provides a guide for pervious concrete mixture proportioning. General mix recommendations are as follows:

- A. Concrete mixture density: range of 105 lb/ft³ to 130 lb/ft³ per ASTM C 29, section 11, Jigging Procedure.
- B. Concrete mixture void content: range of 15 % to 25%, per ASTM C 138, Gravimetric Air Determination.
- C. Cementitious content: range of 300 lbs/yd to 600 lb/yd.
- D. Supplementary cementitious content: Fly ash: 25 % maximum; Slag: 50 % maximum, or combined supplementary cementitious content: 50 % maximum.
- E. Water - cement (cementitious) ratio: range from 0.26 to 0.40.
- F. Aggregate content: The bulk volume of aggregate per cubic yard shall be equal to 27 ft³ when calculated from the density (unit weight) determined in accordance with ASTM C29 Jigging Procedure.
- G. Admixtures: Admixtures shall be used in accordance with the manufacturer's instructions and recommendations.
- H. Mix Water: The quantity of mixing water shall be established to produce a pervious concrete mixture of the desirable workability to facilitate placing, compaction and finishing to the desired surface characteristics. Mix water shall be such that the cement paste displays a wet metallic sheen without causing the paste to flow from the aggregate. (A cement paste with a dull-dry appearance has insufficient mix water for hydration.) Insufficient mix water results in inconsistency in the mix and poor bond strength. High water content may result in the paste sealing the void system primarily at the bottom and poor bond at the upper surface.
- I. Air Entrainment: has been shown to increase freeze thaw durability of pervious concrete.
- J. Fiber Reinforcement: has been shown to increase freeze thaw durability and tensile strength.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. The Architect/Engineer shall be notified at least 24 hours prior to all detention layer or recharge bed placement and pervious concrete paving work.
- B. Proof-roll prepared subbase surface below concrete pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding.\

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

3.2 INSTALLATION

A. Stormwater Detention Layer

1. Subgrade Preparation
 - a. Existing subgrade under detention layer areas shall be shaped to drain per plan lines, grades and specifications. Compaction of the existing subgrade should be kept to a minimum to avoid reduction in the permeability of the soil.
2. Detention Layer Installation
 - a. Upon completion of subgrade work, the Architect/Engineer shall be notified and shall inspect at his discretion before proceeding with detention layer installation.
 - b. Filter, with pipe or other storage devices, and detention layer aggregate shall be placed immediately after approval of subgrade preparation. Any accumulation of debris or sediment which has taken place after approval of subgrade shall be removed prior to installation of filter fabric at the contractor's expense.
 - c. Place filter fabric in accordance with manufacturer's standards and recommendations, including minimum 16 in overlap along the full length of adjacent strips. Secure filter fabric to walls of detention layer excavation and take steps necessary to prevent any runoff or sediment from entering the detention layer excavation. For protection of existing adjacent building foundations, place impervious liner extending 6 ft. beyond slope face at building face and secure as recommended by manufacturer.
 - d. Install coarse aggregate in 6 in. maximum lifts. Lightly compact each layer with equipment, keeping equipment movement over detention layer subgrade to a minimum. Install aggregate to grades required on the plans.
 - e. A choker base course may be installed, consisting of NMOT 6A coarse aggregate to allow more consistent thickness and placement of pavement. The Architect/Engineer shall be notified for approval.
3. Following placement of detention layer aggregate, the filter shall be folded back along all excavation edges to protect from sediment washout along excavation edges. At least a 2 ft. strip shall be used to protect the detention layer from adjacent bare soil. This edge strip shall remain in place until all bare soils contiguous to detention layer are stabilized and vegetated. In addition, straw bales and any other protection that site conditions dictate, shall be placed at the toe of slopes which may be adjacent to detention layers to further prevent sediment from washing into the detention layers during site development. As the site is fully stabilized, excess filter fabric along the detention layer edges can be cut back to coarse aggregate edge.

B. Groundwater Recharge Bed

1. Subgrade Preparation (a flat subgrade is preferred for a recharge bed)
 - a. Existing subgrade under recharge bed areas shall NOT be compacted or subject to excessive construction equipment traffic prior to coarse aggregate bed placement.
 - b. Where erosion of subgrade has caused accumulation of fine materials and/or surface ponding, this material shall be removed with light equipment and the underlying soils scarified to a minimum depth of 6 in. with a rake or equivalent and light tractor.
 - c. Bring subgrade of coarse aggregate recharge bed to line, grade, and elevations required.
 - d. Fill and lightly regrade any areas damaged by erosion, ponding, or traffic compaction before the placing of coarse aggregate.
2. Recharge Bed Installation
 - a. Upon completion of subgrade preparation, the Architect/Engineer shall be notified and shall inspect at his discretion before the contractor may proceed with recharge bed installation.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- b. Filter fabric, with pipe or any other storage devices, and recharge bed aggregate shall be placed immediately after approval of subgrade preparation. Any accumulation of debris or sediment which has taken place after approval of subgrade shall be removed prior to installation of filter fabric at the contractor's expense.
- c. Place filter fabric in accordance with manufacturer's standards and recommendations. Adjacent strips of filter fabric shall overlap a minimum of 16 in. The contractor shall secure fabric at least 2 ft outside of bed and take steps necessary to prevent any runoff or sediment from entering the storage bed. For protection of existing adjacent building foundations, the contractor shall place impervious liner over filter fabric extending 6 ft beyond toe of slope face at building face, and secure as recommended by manufacturer.
- d. Install coarse aggregate in 6 in. maximum lifts. Lightly compact each layer with roller, keeping equipment movement over storage bed subgrades to a minimum. Install aggregate to grades required on the drawings.
- e. A choker base course may be installed, consisting of MDOT 6A aggregate to allow more consistent thickness and placement of pavement. The Architect/Engineer shall be notified for approval.
- f. Following placement of bed aggregate, the filter fabric shall be folded back along all bed edges to protect from sediment washout along bed edges. At least a 2 ft strip shall be used to protect beds from adjacent bare soil. This edge strip shall remain in place until all bare soils adjacent to beds are stabilized and vegetated. In addition, hay bales (if allowed) shall be placed at the toe of slopes which may be adjacent to beds to further prevent sediment from washing into beds during site development. As the site is fully stabilized, excess filter fabric along the bed edges can be cut back to coarse aggregate edge.

C. Pervious Concrete Pavement

- 1. Pavement Thickness: Pavement thickness for all applications (excluding heavy traffic loads) shall be a single-course placement 6 inches thick unless otherwise specified in the plans. Pavements for frequent use by vehicles heavier than single axle service/delivery trucks shall be 8 inches thick. Heavy truck traffic may require special design.
- 2. Formwork:
 - a. Form materials are permitted to be of wood or steel and shall be the full depth of the pavement. Caution: protect filter fabric, and impermeable membranes from puncture or tear when placing forms and form pins. Forms shall be of sufficient strength and stability to support mechanical equipment without deformation of plan profiles following spreading, strike-off and compaction operations. Forms may have a removable spacer of 1/2 in. to 3/4 in. thickness placed above the depth of pavement. The spacers shall be removed following placement and vibratory strike-off to allow roller compaction. (Removable spacers may not be necessary if other means of strike-off and consolidation are used, such as a hydraulically actuated weighted pipe roller screed.)
- 3. Mixing and Hauling:
 - a. Production: Pervious concrete shall be manufactured and delivered in accordance with ASTM C 94.
 - b. Mixing: Pervious concrete shall be batched in central mixers or in transit (truck) mixers. (When concrete is delivered in agitating or non-agitating units, the concrete shall be mixed in the central mixer for a minimum of 1.0 minute or until a homogenous mix is achieved.) Concrete mixed in transit mixers shall be mixed at the mixing speed designated by the manufacturer for 70 - 100 revolutions.
 - c. Transportation: Pervious concrete may be transported or mixed on site and discharge of individual loads shall be completed within one (1) hour of the introduction of mix water to the cement. Discharge times may be extended beyond

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

60 minutes when an increased dosage of hydration stabilizer is used to maintain a wet metallic sheen.

- d. Discharge: Each truckload shall be visually inspected for moisture consistency. Water addition shall be permitted at the point of discharge to obtain the required mix consistency, and as needed to maintain a wet metallic sheen. A minimum of 30 revolutions at the manufacturer's designated mixing speed shall be required following the addition of any water to the mix, prior to further discharge. If water is added more than three times to a load, the dosage rate of hydration stabilizing admixture should be increased in subsequent loads. Discharge shall be a continuous operation and shall be completed as quickly as possible. Concrete shall be deposited as close to its final position as practical and such that discharged concrete is incorporated into previously placed plastic concrete. If consolidation occurs during concrete discharge, placement shall be halted, the mix shall be addressed, and the consolidated portion removed and replaced immediately.
4. Placing and Finishing:
- a. The base shall be in a damp condition at time of placement. Failure to provide a moist base will result in a reduction in concrete strength.
 - b. Concrete may be deposited into the forms by mixer truck chute, conveyor or buggy.
 - c. Unless otherwise permitted, the Contractor shall utilize a mechanical vibratory screed to strike off the concrete $\frac{1}{2}$ in. to $\frac{3}{4}$ in. above final height, utilizing the form spacers described in Formwork. An alternative method to strike off and compaction is to use a motorized or hydraulically actuated weighted pipe roller screed, as described in section 1.04, Special Equipment. If approved by the Architect/Engineer in writing, the Contractor may place the pervious concrete with either slip form or vibratory form riding equipment followed by a compacting unit that will provide a minimum of 10 psi vertical force to the concrete. Similarly, strike off by hand straightedge may be permitted for sidewalks and other small areas followed by compaction.
 - d. Care must be taken to prevent closing the void structure of pervious concrete. After mechanical or other approved strike-off /compaction operation the surface is cross rolled, no other finishing operation will be allowed. Internal vibration shall not be permitted. (If surface vibration is applied, it shall be shut off immediately when forward progress is halted for any reason.)
 - e. Placed concrete shall not be disturbed while in the plastic state including edging. Low spots after the screeding operation shall be over-filled for surface repair and tamped to the desired elevation with hand tampers, or re-screeded with the motorized or hydraulically actuated weighted pipe roller screed.
 - f. Following strike-off, remove spacers and compact the concrete to the form level utilizing a steel roller, a plate compactor on plywood or other method approved by the Architect/Engineer. Longitudinal rolling shall be followed immediately by cross rolling and joint rolling (if specified). Care shall be taken during compaction that sufficient compactive force is achieved without excessively working the concrete surface that might result in sealing off the surface porosity.
 - g. The pervious concrete pavement shall be compacted to the required cross-section and shall not deviate more than +/- 3/8 in. in 10 ft from profile grade.
5. Jointing
- a. Joints in pervious pavements may be omitted at the option of the owner, who may instead choose to accept or prefer the appearance of random cracking.
 - b. Although longer joint spacing may control cracking, for conservative design, contraction (control) joints shall be installed at regular intervals not to exceed 20 ft, and slab length shall not exceed 1.5 times the width of the slab. Transverse contraction joints shall be installed at 1/4the depth of the thickness of the

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- pavement. These joints are to be installed as quickly as possible in the plastic concrete.
- c. Jointing plastic concrete: Joints installed in the plastic concrete may be constructed utilizing a small roller as described in the Special Equipment section of this guide specification. When this option is used it shall be performed immediately after roller compaction and prior to curing. If the Engineer allows sawed joints in writing, they shall be constructed using an early entry or wet saw. Note: Sawed joints may exhibit some raveling, and any dust or slurry generated shall be removed during the sawing operation.
 - d. Transverse construction joints: Transverse construction joints shall be installed whenever placement is suspended for 30 minutes or whenever concrete is no longer workable.
 - e. Isolation joints: Isolate slabs from other parts of the structure, such as walls, footings or columns; and driveways and patios from sidewalks, garage slabs, stairs, light poles and other points of restraint. Isolation joints permit independent vertical and horizontal movement between adjoining parts of the structure and help minimize cracking when such movements are restrained.
 - f. Edging, shall be performed along isolation joints and construction joints, in order to reduce potential for raveling under traffic.
6. Curing:
- a. Curing procedures shall begin immediately but no later than 20 minutes from the time the pervious concrete is discharged from the truck. Placing, finishing, and tooled jointing must be completed within the 20-minute window after discharge. The pavement surface shall be covered with a minimum of 6 mil thick polyethylene sheet or other approved covering material. Prior to covering, a soybean oil based product may be applied to the surface of the concrete. The cover shall overlap at all exposed edges and shall be secured (without using dirt or stone) to prevent uncovering due to winds or adjacent traffic conditions. A spray glue is recommended to secure separate plastic sections and prevent moisture loss. For additional guidance on hot weather concreting, see ACI 305, and for cold weather concreting see ACI 306.
 - b. Due to the low water/cement (cementitious) ratio and large areas of exposed surface, pervious concrete is especially susceptible to drying out. Immediately after screeding, the surface shall be kept moist and evaporation prevented using water or a soybean based, spray applied curing compound and/or evaporation retarder following screeding. Immediately after each transverse jointing, the polyethylene sheet curing shall be applied then cross rolling shall be performed.
 - c. The curing cover shall remain securely in place, uninterrupted, for a minimum of 7 days in warm weather, or 10 days in cold weather. No vehicular traffic shall be permitted on the pavement until curing is complete (7 days) and no truck traffic shall be permitted for at least 14 days without written permission from Engineer. Pedestrian traffic may be permitted on the curing concrete after 24 hours. The Engineer may permit earlier traffic opening times.
 - d. The owner and general contractor are responsible to notify the contractor if the polyethylene sheeting has been removed from the finished surface, and to re-cover the material immediately until the contractor can re-install covering.
7. Quality Control - Concrete:
- a. The Architect/Engineer shall employ a testing laboratory that conforms to the requirements of ASTM E329 and ASTM C1077. All personnel engaged in concrete testing shall be certified as a Michigan Level I Field Testing Technician.
 - b. Traditional concrete testing procedures for strength and slump control are not applicable to this type of pavement material. Procedures to be used per this guide specification include: ASTM C 172, ASTM C 29, ASTM C 42 and ASTM C 138.
 - c. Concrete tests shall be performed for each 150 yd³ or fraction thereof, with a minimum of one set of tests for each day's placement.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- d. Sampling - Plastic concrete shall be sampled in accordance with ASTM C 172.
 - e. Density (unit weight) - Density shall be performed in accordance with ASTM C 29. The measure is to be filled and compacted in accordance with Section 11, Jigging Procedure. The density of the delivered concrete shall be within ± 5 lb/ft³ of the design density (unit weight).
 - f. Void content - Void content of the plastic concrete shall be determined in accordance to ASTM C138 Gravimetric Air Determination (determine fresh density in accordance with ASTM C 29, Section 11, Jigging Procedure) and core density in accordance with ASTM C 140, paragraph 9.3., and compared to the void percentage required by design. Unless otherwise specified, the void content shall be between 15% and 25%.
 - g. After a minimum of seven (7) days, hardened concrete shall be tested at a rate of one set of three cores per 150 yd³ of concrete placed on one day or fraction thereof. Cores shall be drilled in accordance with ASTM C 42. The cores shall be measured for thickness, void structure and density.
 - h. Thickness - Untrimmed hardened core samples shall be used to determine placement thickness. The average of all production cores when measured for length shall not be more than 1/2 in. less than the specified design thickness.
 - i. Core density (unit weight) and void content - the cores shall be tested for density (unit weight) and void content following ASTM C 140. Density (unit weight) of cores trimmed and tested in the saturated condition, per ASTM C 140, paragraph 9.3.1, shall be ± 5 lb/ft³ of the design density. Void content shall not be more than 2% below the specified design void content. Void content shall be calculated as follows:
 - 1) % Voids = $1 - (D_d/D_i) * 100$ where: D_d = oven dried density of core D_i = immersed density of core
8. Performance/Maintenance
- a. Excessive raveling - At or before 28 days after placement, any areas of excessive surface raveling, as determined by the Architect/Engineer, shall be removed and replaced or repaired by the Contractor, at no additional cost to the project.
 - b. Surface drainage - At or before 28 days after placement, any areas of insufficient surface porosity, as determined by the Architect/Engineer in their design calculations, shall be removed and replaced by the Contractor, at no additional cost to the project.
 - c. Maintenance/Special Care - during the 28 days after placement, a maintenance plan shall be put in place. Acceptable methods of maintaining and restoring concrete porosity include vacuuming and power washing. Plow blade may be set .25 inches above surface of pavement to prevent potential raveling of the pavement's surface. Owner of lot shall avoid the placement of fine materials i.e. (soil, woodchips, peat moss) on pervious pavement surface.

END OF SECTION

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

SECTION 02800

SITE FURNISHINGS

PART ONE - GENERAL

1.01 DESCRIPTION

- A. Work included: The work under this Section consists of, but is not necessarily limited to, furnishing and installing site furnishings as shown on the drawings.

1.02 SUBMITTALS

- A. For each of the products, identified in this specification, provide to following materials for review and approval by the Engineer:
1. Catalog cuts indicating the product submitted, clearly identifying the make and model.
 2. Provide color pallet for both supports and bench seat to verify specified colors are provided.
 3. Provide anchor bolt and anchoring method submittals for table, bench and grill.

PART TWO - PRODUCTS

2.01 MATERIAL

A. Site Furnishings

1. General:

- a. Benches: Benches shall be six (6) foot nominal length, surface mounted, with a back and armrests. Supports and armrests are to be cast or steel and have a black powder coated finish. Seats shall be pressure treated southern yellow pine or natural wood color recycled plastic. The following manufacturers, product numbers and styles shall be considered as approved for the work:
 - 1) Riverview Series, Model Number B62/CB-6TP34 by Pilot Rock, R.J. Thomas Manufacturing Co., Inc. of Cherokee, Iowa, (800)762-5002.
 - 2) Burlington Bench Model 3351, by Litchfield Industries, Contact Representative:Craig Saylor with Korkat, Inc. Horton, Michigan, Mobile (517) 474-1941, Main office (866)-3KORKAT, email: craigsaylor@live.com.
 - 3) Imperial Bench with Back, Model Number 02JC1362, Barco Products Company, Batavia, Illinois, (800) 338-2697.
- b. Picnic Table: Picnic Table shall be four (4) foot square with 4 each removable, cantilever seat arms and surface mounted. Supports and structure shall be steel with a powder coated black finish. Seats and top shall be natural wood colored recycled plastic (cedar or similar). Removable seats shall have theft-proof attachments, once the table is installed. Seats and table top shall be chamfered to facilitate ease of access and egress from the bench. The following manufacturers, product numbers and styles shall be considered as approved for the work:
 - 1) Pedestal Table Model PQT/P/CB-4PC, by Pilot Rock, R.J. Thomas Manufacturing Co., Inc. of Cherokee, Iowa, (800)762-5002.
 - 2) Other table manufacturers may be submitted to the Engineer for review as an equal. For the contractors protection, please **provide submittals a minimum of 9 days prior to bid opening for Engineer review and approval. Submittals for tables not preapproved are done so at the contractors risk.**
- c. Grill: Grill shall have firebox dimensions of 15"x20"x10" with a cooking area of 300 square inches and be fixed, pedestal mounted (no top) Firebox and post shall be hot dipped galvanized. The cooking grate shall be adjustable for 3.5" to 5.25" above the bottom. A 7"x19.25" shelf shall be included. The following manufacturers, product numbers and styles shall be considered as approved for the work:

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- 1) Grill Model Q/G-20 with B3 pedestal base and S3/G Shelf, by Pilot Rock, R.J. Thomas Manufacturing Co., Inc. of Cherokee, Iowa, (800)762-5002.
 - 2) Grill Model SF-1635G/SM, by Kay Park, Janesville, IA, (877)529-7275.
- B. Information Panels:
1. Surface mounted exhibit base:
 - a. Surface mounted exhibit base, panel to be 42" long, 24" wide (deep), and be a low profile, cantilever type, with metal supports (powder coated). Underclearance to be 32" above grade for ADA compliance. Standard of construction to be as per Hopewell Manufacturing,. Information for panel to be supplied by others.
 - 1) The following manufacturers shall be considered as approved for the work:
 - a) 42X24, Sea Reach, Low Profile cantilever model, Hopewell Manufacturing, Hagerstown, MD, Phone: (301)582-2343.
 - b) Model No 4426 OL CAN-AL, KVO Industries, Santa Rosa, CA 95403, Phone: (707)573-6888.
 - c) Wayside Exhibit Low-Profile Cantilevered Base, Harpers Ferry Center/National Park Service, Harpers Ferry, WV, Phone: (304)535-5050.
 2. Railing mounted exhibit base:
 - a. Railing mounted exhibit base, panel to be 36" long, 18" wide and be a cantilever type, railing mounted with metal supports (powder coated). Information for panel to be supplied by others:
 - 1) The following manufacturers shall be considered as approved for the work:
 - a) 36x18 Low Profile Rail Mounted Unit, Hopewell Manufacturing, Hagerstown, MD, Phone: (301)582-2343.
 - b) KVO Industries, Santa Rosa, CA 95403, Phone: (707)573-6888.
 - c) 36x18 Wayside Exhibit Low-Profile Custom Rail Mount Base, Harpers Ferry Center/National Park Service, Harpers Ferry, WV, Phone: (304)535-5050.
- C. Other:
1. Tactile Warning Devices:
 - a. Tactile warning devices shall be embedded in the concrete walk, shall be dark in color, preferably black, as required to meet the Americans with Disabilities Act guidance for contrast. Colors other than black will be evaluated for contrast against the ADA guidance by the Engineer. Device shall be the size as shown on the plan and may be constructed with a series of individual plates to achieve the size required.
 - 1) Tactile Warning Plates, by East Jordan Iron Works, East Jordan, MI (800) 536-4427.
 - 2) Cast in Place, Tactile Tile Detectable Warning Surface System, Model No. ATS-C-2X5, by Advantage Tactile Systems, Buffalo, N.Y., (800) 679-4022. Distributed by ErSCO Construction Supply, Traverse City, MI, (800) 224-6048.
 2. Protective Boulders:
 - a. Boulders shall be 4' in the least dimension. They shall be free of fissures and cleaned of spalling. Boulders shall be quarried limestone or granite.

PART THREE - EXECUTION

3.01 INSTALLATION

- A. Bench
1. Bench shall face the lake and shall be installed according to manufacturer's directions. Method to anchor the bench to the concrete pad shall be reviewed by the Engineer prior to installation.
- B. Table
1. Table shall be installed according to manufacturer's directions. Method to anchor table to the concrete pad shall be reviewed by the Engineer prior to installation. Contractor shall remove one of the cantilevered benches and furnish it to the Owner. Contractor shall coordinate with the Engineer of the desired orientation of the bench prior to installation.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- C. Grill
 - 1. Grill shall be installed according to manufacturer's directions. Grill orientation shall be coordinated with the Engineer prior to installation. Method of anchoring grill shall be reviewed by the Engineer prior to installation.
- D. Tactile Warning Device:
 - 1. Tactile warning device shall be installed according to manufacturer's directions. Device shall be installed flush with the surrounding concrete.
- E. Protective Boulders:
 - 1. Boulders shall be place in a manner that will protect the concrete from cracking.

3.02 PROTECTION

- A. Installed furnishings shall be protected from damager during construction and shall be clean of construction debris and dirt for turning over to the Owner.

END OF SECTION

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

SECTION 02891

FLOATING FISHING PIER

PART ONE - GENERAL

1.01 Description

- A. Work Included: Design, fabricate, install and furnish all plant, labor, equipment, supplies and materials and perform all operations required for installation of a complete, fully functional and operational floating fishing pier, including but not necessarily limited to fishing piers, ramp, and anchorages, all as indicated on the drawings and as specified herein.
- B. Contract Drawings:
1. The contract drawings are general in nature and show basic floating fishing pier layout with required dimensions and certain required materials and details of construction.
 2. The fishing pier shown on the drawings is to as manufactured by Flotation Docking Systems, Inc. of Cedarville, Michigan, or approved equal. **See prequalification requirements in Part 1.05 - Submittals.**
 3. The Michigan Department of Environmental Quality – Land & Water permit. . #09-42-0014P. The contractor shall adhere to the conditions of the permit.
- C. Fabrication: The contract drawings are not intended to be used for fabrication. The Contractor shall prepare and submit at least six sets of shop drawings and product data to the Engineer for approval prior to fabricating and installing the required fishing pier system.
- D. Other Materials and Equipment: Other materials and equipment shall be as indicated on the Drawings, however, all other materials not specifically described but required for a complete and proper installation of the work under this section, shall be new, first quality, and if selected by the Contractor subject to the approval of the Engineer.

1.02 Dimensions

- A. General:
1. Fishing pier layout shall be to the configuration shown on the drawings. Dimensions shown are the minimum nominal acceptable.

1.03 Design Criteria

- A. General: Unless otherwise noted, floating fishing pier, anchorages and connections shall be designed in accordance with ASCE Report No. 50, "Small Craft Harbors" dated 1994 or current edition.
- B. General Structural Design:
1. All structural members shall be designed and appropriately sized to carry and accept all design loads without failure or excessive deformation.
 2. Members shall be so sized to compensate for reductions in cross section resulting from the drilling of bolt holes and cutting of openings needed for utilities.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

3. Only single width fishing pier modules shall be allowed.
- C. Loads: Fishing pier, ramps, connections and anchorages shall be designed for the following loads and conditions.
1. Vertical Deadload:
 - a. Dead loads shall be the entire weight of the floating fishing pier and attachments including the anchorages.
 - b. In addition, fishing pier shall have their outer ends at least level with, but in no case more than two inches higher than, the elevation of the main fishing pier at their plane of attachment.
 - c. The ends of fishing pier shall be as level as practical but in no case shall a cross slope of more than $\frac{3}{4}$ inch for each four feet of width be tolerated under dead load conditions.
 2. Vertical Live Load:
 - a. A uniform live load of not less than 30 pounds per square foot on ramps and on the deck and structural frame of the floating fishing pier shall be used.
 - b. Minimum live load for floatation shall be 30 pounds per square foot.
 - c. Fishing pier must be designed to withstand a 400 pound concentrated live load one foot from the end of the fishing pier without a loss in freeboard of more than four inches.
 - d. With a 200 pound load on one corner of a fishing pier there shall be no more than a two inches difference in freeboard across the end of the fishing pier for each three feet of fishing pier width.
 3. Combined Vertical Deadload and Live Load:
 - a. Combined dead load plus live load for fishing pier and ramps shall be the actual dead load plus 30 psf live load. However, for purposes of calculation, the combined dead load plus required 30 psf live load shall never be calculated as being less than 50 psf.
 - b. Ramps shall be so designed that maximum live load deflection of the ramp is limited to $\frac{1}{180}$ of the span.
 - c. Extra floatation of the same general type and design used for the floating fishing pier shall be installed at end sections as required to compensate for end reactions of ramps due to combined loading.
 - d. In no case shall the supporting fishing pier module at the ramp connection be less than the designated freeboard under combined loading nor more than two inches above the freeboard shown on the approved shop drawings under the full deadload including utilities.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

4. Dead Load Freeboard:
 - a. Fishing pier manufacturers shall provide fishing pier with dead load freeboards of not less than 16 inch or more than 20 inch (four inches tolerance to allow for variations between manufacturers).
 - b. However, actual dead load freeboard shall not vary appreciably from the freeboard designated on the manufacturer's approved shop drawings with fishing pier presenting a reasonably level, flat, even surface to the eye under dead load conditions.
 - c. As indicated, fishing pier shall be reasonably level, but in no case shall a cross slope exceeding 1½ inches in eight feet of width be tolerated under dead load conditions.
 - d. At the design load of dead load plus 30 psf live load a freeboard of not less than 10 inches shall be maintained.
 5. Wind Load
 - a. The uniform wind load for determining lateral loadings on an independent pier or pier system from any direction, will be 15 psf on all projected surfaces.
 - b. Wind loads shall be calculated in directions both perpendicular to and parallel to the main pier and the maximum wind loadings shall be used for design of piers and anchorages.
 6. Fishing piers and floatation shall sustain the loads imposed by non-moving ice without damage, fracture or puncture.
 7. The dock system including ramp and anchorages shall be capable of sustaining waves up to 1-1/2 feet without damage.
- C. Design Intent:
1. The gangway of the fishing pier will be disconnected from the abutment for winterization and the anchor chains reconnected to the anchor wells such that the pier will be moved away from the abutment to accommodate movement without damage to the pier or gangway. The floatation unit under the gangway shall be such that it will support the weight of the gangway. The gangway floatation shall be such that it will support the gangway in floating position near the elevation of the abutment connection. The intent is to facilitate ease of reattachment to the abutment without the need to lift the weight of the gangway.

1.04 Codes and Standards

- A. Abbreviations: Reference is made in these specifications to the codes and/or standards promulgated by the following agencies and organizations:
 1. ASCE American Society of Civil Engineers, 345 East 47th Street, New York, NY 10017
 2. ASTM American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

3. AWPA American Wood Preservers Association
 4. AWPB American Wood Preservers Bureau, P.O. Box 6085, Arlington, Virginia 22206
 5. AWS American Welding Society, Inc., 2501, N.W. 7th Street, Miami, Florida 33125
 6. LWD Low Water Datum
 7. SPIB Southern Pine Inspection Bureau
- B. Compliance: Comply with those codes and/or standards specified in this Section and referenced above.
- C. Conflicts: In case of conflict between the referenced codes and/or standards, the most stringent requirements shall govern.

1.05 Submittals

- A. **If the lowest qualified Bidder is submitting alternate products for the floating fishing pier, documentation verifying that the alternate meets or exceeds specifications shall be submitted for review and approval by the Engineer 14 days prior to the bid opening date. Engineer will reply with the approval or denial via pre-bid addendum 4 days prior to bid opening date.**
- B. Shop Drawings:
1. The successful bidder shall be required to submit six complete sets of detailed shop drawings of the complete fishing pier system to the Engineer for approval prior to fabrication of the required floating fishing pier system.
 2. The shop drawings shall show all dimensions, clearances, and anchorage locations.
 3. The detailed shop drawings shall bear the seal of a professional engineer registered to practice in the state of Michigan who is experienced in the design of floating structures, anchorages and related appurtenances.
 4. In addition, two copies of design calculations shall be required along with the shop drawings.
- C. Construction Sequence: The successful bidder shall be required to submit a construction sequence schedule as well as a construction time schedule.
- D. Record Drawings: At the completion of the work the successful bidder shall provide the Engineer with reproducible drawings of the fishing pier system installation incorporating all changes made during the construction and installation process.
- E. Quality Control:
1. The successful bidder shall submit a copy of the quality control program which is used to manufacture their particular floating fishing pier system.
 2. The quality control program submitted by the manufacturer will be used by the Engineer to establish an inspection schedule and testing requirements to insure compliance with the plans and specifications particularly in the following areas:
 - a. Weld quality.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- b. Certifications for materials such as steel, galvanizing, wood, wood treatment, bolts and fasteners, floatation and floatation encasement.
- c. Dimensional inspection.
- d. Galvanizing.
- e. Quality of floatation material and encasement during manufacturing.

1.06 Product Handling

- A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Engineer and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 Materials

A. Lumber

- 1. Decking lumber shall be No. 1 select structural Southern Yellow Pine or better and shall conform to the rules of the SPIB as applicable.
- 2. Framing lumber shall be No. 1 Southern Yellow Pine or better, and shall conform to the rules of the SPIB.
- 3. Timber and lumber shall be pressure treated with chromated copper arsenate preservative in accordance with AWPB Standard LP-22 and each piece shall bear the AWPA Quality Mark or equal.
- 4. Deck boards shall not have any holes, loose knots or wane and shall not have sap or free flowing preservative on the walking surface.
- 5. Lumber shall be kiln dried prior to treating to the moisture content designated in accordance with SPIB rules.
- 6. All lumber shall have a minimum of 0.40 pounds per cubic foot of preservative retained after treatment except lumber which is in continuous contact with water. Such lumber shall have a minimum of 0.60 pcf of preservative retained after treatment.
- 7. The Engineer, at his discretion, may assay the treated lumber and have the AWPB laboratory test the pressure treatment retention of all lumber prior to acceptance at the contractor's expense.

B. Structural and Miscellaneous Steel:

- 1. Structural and miscellaneous steel shall conform to the requirements of the Standard Specification for Structural Steel, ASTM Designation A36 or stronger.
- 2. All steel shall be zinc coated (hot-dipped) in accordance with the requirements of ASTM Designation A123.

C. Structural Aluminum: Structural aluminum shapes and/or extrusions shall be made from 6061-T6 aluminum conforming to the requirements of ASTM Designation B221.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- D. Fasteners:
1. Bolts, lag bolts, screws, nails, flat washers and lock washers shall be of the type and size best suited for the intended use.
 2. Low-carbon bolts shall conform to the requirements for Grade "A" bolts, ASTM Designation A307.
 3. High strength bolts shall conform to the requirements of ASTM Designation A325 or A490.
 4. All fasteners shall be hot dipped galvanized or mechanically galvanized by the MACU Guard method or approved equal. MACU Guard is a process licensed by MacDermid Inc., 50 Brookside Road, Waterbury, CT 06708, Phone (203) 575-5700.
 5. The coating thickness shall be of a minimum that corrosion of non-wear surfaces does not appear during the warranty period.
 6. Stainless steel fasteners may be substituted for protected steel.
- E. Arc Welding Electrodes: Arc welding electrodes shall conform to American Welding Society "Iron and Steel Arc Welding Electrodes".
- F. Floatation Materials: The floatation material shall be closed cell polystyrene with an average density of one pound per cubic foot and a buoyancy factor of 59.0 pounds per cubic foot to allow for moisture absorption.
- G. Galvanized Steel Sheet Metal:
1. Galvanized steel sheet metal shall be at least 20 gauge conforming to the requirements of either the Standard Specification for zinc-coated (Galvanized Carbon Steel Sheets of a Commercial Quality, ASTM Designation A526) or zinc-coated (Galvanized) Steel sheets of structural quality, coils and cut lengths, ASTM Designation A446.
 2. The steel base metal, its formability and zinc coating shall be in accordance with ASTM Designation A525.
 3. The zinc coating shall have a minimum of two ounces per square foot.
- H. Aluminum Alloy Plate: Aluminum alloy plate shall be equivalent in strength to 20 gauge steel and be 0.124 inch thick, alloy 5052, H36 Marine Aluminum conforming to the requirements of the Standard Specification for Aluminum-Alloy Sheet and Plate ASTM Designation: B209.
- I. Medium Density Polyethylene: Medium density polyethylene shall be black in color having a nominal thickness of 0.1875 inches with an allowable tolerance of ± 0.0375 inches and shall meet the following standards:
1. Density: 58.22 pounds per cubic foot, ASTM 1505.
 2. Environmental Stress Cracking F50: 1000 hours, ASTM D1693.
 3. Ultimate Tensile Strength Range: 2490 to 2600 pounds per square inch, ASTM D638.
 4. Vicant Softening Temperature Range: F 235 to 240° F, ASTM D1525.
 5. Brittleness Temperature: -180° F, ASTM D746.
 6. Flexure Modulus Range: 96,000 to 100,000 pounds per square inch, ASTM D790.
- J. Lifting Rings:

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

1. Lifting rings, where used in lieu of lifting straps or other acceptable methods of removal, shall be of galvanized cast steel of a size sufficient to safely handle the anticipated loads.
 2. The rings shall have an internal diameter of 2½ inches.
 3. Each fishing pier module to be lifted using rings shall have four rings so located that the unit may be lifted without adversely stressing the fishing pier module.
 4. If lifting straps are used the manufacturer shall provide the owner with a pair of straps of adequate strength to lift the heaviest module provided.
- K. Galvanized Pipe: Galvanized steel pipe for spud anchorage systems shall conform to the requirements of ASTM Designation: A120 or A123 as applicable.
- L. Fence Fabric
1. Fence fabric shall meet ASTM standards F934 Standard colors for polymer - coated chain link fence materials and F668 Chain link fence fabric, poly (vinyl chloride) (PVC) - coated steel.
 2. Fence shall be 9-gauge black vinyl-coated, 1" mesh, chain link fabric. Vinyl coated chain-link fence fabric shall be supplied with a 9 gauge aluminized steel core wire. The vinyl coating shall be extruded and bonded to a 6 gauge finish. All top and bottom selvages to be knuckled. The fence fabric shall be imprinted with manufacturer's trade name, country of origin, core wire gauge and finished outside diameter gauge. The fabric shall conform to Federal Specification RRF191/ID type 1B with an aluminized steel core wire.
- M. PVC Coating Process
1. The steel pipe shall first be subjected to a spray washing with a mild acid and ambient temperature water solution to assure clean surface. Secondly, the pipe shall be treated with an ambient temperature water spray rinse after the acid wash. The steel is then treated with a heated washing station where the pipe is sprayed with a solution of iron phosphate and cleaning compound - which acts as an adhesion enhancer. The final stage of the washing and rinsing cycle includes a rinsing with ambient temperature water. The drying cycle requires the material be immersed in a water based vinyl primer, than spread on a table for forced air drying. During the PVC coating application the material is heated to approximately 500 degrees F. The steep pipe is dipped in a fluidized bed of PVC powder. After PVC dipping, steel pipe is hung on a conveyor to allow proper curing. For final cooling, material is immersed in cool water. The PVC coating shall be equal to the ColorBond product for adhesion and coating thickness.
- N. Anchor Chains and Tensioners:
1. Anchor chains to be from 5/8" grade 43 chain.
 2. Tensioner to be elastomeric type by Seaflex AB Model No. 02-015GG, one for each anchor chain or equal to be provided by the dock manufacturer to provide movement due to wind, ice sheet expansion and ice pack movement without damage to the dock system. Tensioner shall be installed at the anchor block end of the chain to allow for winterization adjustment (shortening) of the chain anchor while maintaining the flexibility of the anchor as part of the system.

PART 3 - EXECUTION

3.01 Fishing piers

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

A. General:

1. Fishing pier shall be pre-fabricated within practical limits in the plant by the fishing pier manufacturer and delivered ready for floatation.
2. All workmanship shall be first class in all respects as determined by the Engineer and any units not representing a finished and acceptable appearance will be rejected.

B. Connector Plates and Connections:

1. All connector plates, including those in-line, at the corners and at knee braces which receive loads from impact and anchorage forces shall be of a height, width and thickness sufficient to dissipate the required loads to the framework without distortion or damage.
2. Connections may be either of the single or double shear type with hinge pin (bolt) holes parallel and along the hinge pin axis.
3. Hinge pin holes shall be as tight as possible to eliminate excessive "slop" and unnecessary movement in the joints.
4. Calculations may be required to demonstrate the frame's ability to accept such loads imposed through the connectors as well as the ability of the connections (single or double shear) to resist the loads without distortion or damage.

C. Galvanized Steel:

1. All steel galvanized members must be hot dip galvanized after fabrication, including welding, and after the drilling of bolt holes for the attachment of anchorages and fishing pier mounted components.
2. Exception is given only to those field welds which must be performed, as determined by the Engineer, at a custom connection and done so in the interest of quality control.
3. Where applicable, enough coats of an acceptable cold galvanizing compound must be applied to the field weld to give a thickness equal to the adjoining original hot dip galvanizing.

D. Finished Steel Members:

1. All finished steel members shall be free from twists, bends, distortions, and open joints.
2. All steel construction shall be free of sharp edges and burrs.
3. Ends of exposed steel members shall be rounded or beveled.
4. All coping and metering shall be done with care.
5. Projecting materials and burrs which would prevent bearing of the various members on each other shall be removed.

E. Welding:

1. All welding shall conform to the requirements of the American Welding Society.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

2. Welds shall be a solid and homogenous part of the metals joined and shall be free from pits or scale, and shall be of full area and length required to develop the required strength for the intended use.
3. All shop welders, welding operators, welding equipment and welding procedures used in production of steel structures shall have been qualified in accordance with the qualification procedures of AWS D1.1.
4. Welders shall be certified to perform the welds which are shown on the fabrication drawings.

F. Bolting:

1. All bolts, nuts and washers shall be of a size and strength adequate for the loads imposed and shall be set square with connecting structural members with the nuts drawn up tight.
2. Lock washers or other devices or techniques shall be used to prevent nuts from loosening after being properly tightened.
3. No bolt threads shall be allowed within the structural components in hinged type connections.
4. Hinge pins or bolts shall be of a positive locking type which will not allow loosening or loss of the pin or bolt from movement of the joint.
5. High strength bolts shall be used where required in accordance with the American Institute of Steel Construction's specifications for "Structural Joints Using ASTM A325 or A490 Bolts".

G. Counterboring:

1. Lumber shall be counterbored wherever projecting bolt heads or nuts may damage boats or provide a hazard to fishing pier users.
2. Counterboring shall be sufficiently deep to permit installation of the bolts and nuts with washers well below the surface of the wood.

H. Fastening of Deck Boards:

1. Deck boards may be fastened either by screwing or bolting.
2. Deck screws shall have heads slightly depressed into the deck surface to provide a flat, even walking surface.
3. Deck screws shall be installed so as not to fracture the wood and cause splintering at the hole.
4. Number of screws used per connection shall be adequate to firmly attach the deck boards and provide a flat, even walking surface.
5. Fasteners of whatever type shall be located in symmetrical patterns throughout with fasteners in straight lines.

I. Deck Board Spacing:

1. Deck boards shall be installed with a 1/8 inch space between adjacent deck boards.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

2. Decking shall be installed perpendicular to the longitudinal axis of the fishing pier.
- J. Deck Board Support and Installation: Deck boards shall be supported at a maximum of three feet on center with the boards laid with the best side up or if there is no best side then heart side down.
- K. Openings:
1. Openings between adjacent floating fishing pier modules shall not exceed 1/2 inches.
 2. The opening between adjacent fishing pier module end deck boards shall not exceed 1/8 inch.
 3. All connections between floating fishing pier modules shall not protrude above the level of the fishing pier surface.

3.02 Floatation Units

- A. Floatation shall be provided by closed cell polystyrene cellular materials, either preformed or expanded in place.
- B. The floatation material shall be fully encased in at least 20 gauge galvanized steel sheet metal, marine aluminum at least 0.124 inches thick, medium density polyethylene with a nominal thickness of 0.1875 inches, wood having a nominal thickness of 2 inches, or a combination of these materials
- C. The floatation units shall be securely connected to the fishing pier framing and deck so that the floating fishing pier including floatation acts as an integral unit within the tolerances specified without damage or separation.
1. The connections must be such as to prevent the tearing away or other damage to the floatation units and/or fishing pier frames at the points of connection.
 2. Materials used to attach floatation units shall have a life expectancy as long as the unit itself.
- D. Floatation units shall be so designed and supported so that no damage occurs during shipping, handling or under normal use.
- E. If floatation is installed at the manufacturer's plant as an integral part of the floating fishing pier, the Engineer has the right to inspect the fishing pier in various stages of manufacture to insure the floatation as well as other materials used meet the intent of the specifications. Further, the Engineer has the right to make inspections at unannounced times and to choose the units to be inspected at random.
- F. If separate, sealed floatation units are used, prior to the start of the manufacturing of or the ordering of such units, one unit of each size and type shall be sent to the Engineer for testing.
1. The unit(s) shall be cut open to check on floatation density, completeness of foaming, shell thickness, etc.
 2. If the units meet the intent of the specifications, the Engineer shall give the manufacturer written permission to proceed with manufacturing the units or ordering the units if purchased from another manufacturer.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

3. If units do not meet the specifications, changes shall be made in the materials and/or fabrication until units, chosen thereafter at random, do meet the requirements of the specification.
4. Units purchased from other manufacturers shall be so modified that they do meet specifications or units from other manufacturers which do meet specifications shall be substituted.
5. Delays and costs due to tests, retests, modifications, substitutions and shipping shall be borne by the manufacturer of the floating fishing pier.

3.03 Ramps

A. General:

1. A ramp shall be required between the fishing pier and fixed abutment.
2. Ramps shall have timber decks constructed of 2" x 6" or 2" x 8" lumber, adequately supported, installed perpendicular to the longitudinal axis of the ramp and meeting the material requirements specified in this section.
3. Deck boards shall be spaced 1/8 inch apart.

B. Length:

1. Ramps shall be of such a length to never exceed a one vertical to eight horizontal slope with the water level at an elevation of 1 foot below low water datum.
2. Top of ramp elevation(s) shall be as shown on the contract drawings.

C. Ramp Connections:

1. The ramps shall be hinged at the dock end and have a hinged/pinned connection at the shore end, to allow for movement due to fluctuating water levels.
2. The hinged/pin connection will allow the dock to rotate about a point centered on the abutment. The hinged/pin connection shall be of adequate strength to carry the design live loads applied to the ramp in addition to the weight of the ramp, handrails and utilities.

D. Ramp Floatation:

1. The floatation ramps shall be hinged at the dock end and have a hinged/pinned connection at the shore end, to allow for movement due to fluctuating water levels.
2. The hinged/pin connection will allow the dock to rotate about a point centered on the abutment. The hinged/pin connection shall be of adequate strength to carry the design live loads applied to the ramp in addition to the weight of the ramp, handrails and utilities.

3.04 Skirting

A. Skirting is required.

- B. Required exposed structural framework and floatation devices shall be skirted from decking to a two inch maximum above the waterline at dead loading or in the case where skirting is the prime side wall member (timber box type floating fishing pier) incrementally lower to bottom of unit below water line with a nominal two inch thick wood meeting the lumber requirements as specified.**

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- C. The skirting must be adequately secured full depth to the frame members with bolts or other acceptable fasteners as dictated by sound engineering practices to prevent skirting and frame damage by ice, wave and impact design forces.

3.05 Knee Braces and Fillets

- A. The end fishing pier shall have knee braces that extend at least four feet along the end fishing pier and main fishing pier.
- B. The knee brace isosceles triangle area shall be covered with the same deck material used for other decking.
- C. The edge of each fillet shall extend slightly beyond the knee brace and the edge of the fillet shall have a rub rail to protect a boat from impacting upon bare steel.

3.06 Railings:

- A. Railings shall be required on the piers and ramp and may be part of the structural support or separate units.
- B. Railings shall be 42 inches or 32 inches above the deck surface as detailed on the drawings.
- C. All handrails shall be smooth and free of sharp corners, burrs or projections to make a smooth member for hand contact.
- D. Railings and handrail brackets shall be designed to withstand a minimum concentrated load of 200 pounds applied from any direction at any point on the handrail.
- E. Fittings shall be galvanized.
- F. Sharp corners on railings or trusses used as handrails shall be avoided by the use of short 45 degree miters, short curved sections, or other approved methods.
- G. Protrusions on the railing or on the decks and ramps themselves shall not have sharp corners.

3.08 Anchorage System

- A. General:
 - 1. The floating fishing pier shall be secured with chain, flexible anchor tensioners and concrete gravity anchoring system at the outer end of the pier and a chain, flexible anchor tensioners and helical anchors at the inner end of the pier..
 - 2. The anchorage system shall secure the floating fishing pier under the most severe loading conditions given in Article 1.04 DESIGN CRITERIA.
- B. Chain Type Anchoring Systems:
 - 1. Chains shall be 5/8" grade 43.
 - 2. Concrete gravity anchors shall be constructed as indicated in the plans. Concrete shall be 3000psi compressive strength. Other materials required for anchors shall be as indicated on the plans.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

3. Helical anchors shall be installed to be able to withstand 2x the breaking strength of the anchor tensioner.

3.09 Installation

- A. The fishing pier manufacturer shall provide a full time superintendent at the job site to supervise and coordinate the unloading assembly and installation of the floating fishing pier system including anchorages, ramp and fixed abutment as well as to coordinate fishing pier related activities with those activities that are the responsibility of other trades and/or contractors.
- B. A maximum amount of fabrication and assembly shall be done at the fishing pier manufacturer's plant rather than on the job site.
- C. Fishing pier shall be carefully unloaded and kept in orderly piles or stacks until placed in the water.
 1. Competent craftsmen shall be employed to float and anchor the fishing pier.
 2. Workmanship shall be first class throughout.
- D. Each fishing pier shall be securely tied to avoid damage until permanent connections to anchorages are made.

3.10 Maintenance and Operations Manual

- A. Upon completion of the project the contractor shall furnish the Owner four (4) copies of a "Maintenance and Operations Manual" which shall include instructions and related information for maintaining and operating the floating fishing pier system and anchorages.
- B. The Contractor shall include in the manual, a detailed procedure for systematically maintaining and winterizing the fishing pier system, and anchorages between boating seasons, as well as minimizing ice damage to the system during the winter.
- C. The Contractor shall also include in the manual, a detailed procedure for systematically removing, storing and reinstalling the floating fishing pier system for the purposes of repair and maintenance.
- D. The manual shall include the following:
 1. Reduced size copies of the final "as built" layout and fabrication drawings.
 2. A listing of purchased items or parts likely to need repair or replacement such as connections, "special" bolts and fasteners, etc.
 3. A copy of the warranty.
 4. The list of purchased items shall include the name, address and phone number of suppliers and shall be accompanied with appropriate catalog cuts and manufacturer's specifications.
- E. The instructions for maintenance shall include preventive maintenance procedures as well as ordinary maintenance and shall include schedules for such activities.
- F. The manual shall also include a "winterization" procedure:
 1. The intent of the layout as shown in the plans is proposed for disconnection of the chain anchors from the crossing pattern as shown in the plans. The ramp will then be

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

disconnected from the abutment and the pier floated away from the shore. The chains will then be reconnected to the anchor wells directly above the gravity anchors.

2. The procedure shall be modified from Item 1. (above) as necessary by the manufacturer to provide a complete winterized system. The procedure shall also include directions for reinstalling the pier.

3.11 Warranty

A. The fishing pier manufacturer shall execute and deliver to the Owner, before final payment, on manufacturer's letterhead, a letter of warranty plus labor and material guarantee which shall include at a minimum the following words and items of performance:

1. The fishing pier shall be warranted for five years, from the date of acceptance of the entire floating fishing pier system by the Owner, that the floating fishing pier and all related items shown on the drawings and included in the specifications shall be free from defects in design, construction, materials, workmanship and installation when utilized as intended and within the conditions specified.
2. Should any defects develop during the warranty period, the manufacturer shall provide the necessary materials and labor needed to correct the defects by repair or replacement without expense to the Owner.
3. The warranty specifically excludes acts of nature or use producing conditions beyond the design criteria set forth in these specifications.
4. Commercially purchased items, shall be warranted for one year or the warranty period provided by the manufacturer, if longer than one year.
5. The fishing pier manufacturer shall not be responsible for damages caused by the Owner not operating and/or maintaining and/or winterizing the floating fishing pier system in accordance with the maintenance, operating and winterizing procedures provided by the fishing pier manufacturer in the "Maintenance and Operations Manual" approved by the Engineer at the time of final acceptance.
6. Specific items of floating fishing pier performance during the warranty period are as follows:
 - a. The average freeboard shall not have decreased more than 1½ inch from the average freeboard that existed at the time of the original installation at the end of one year and not more than 2½ inch at the end of the warranty period. However, it is expected that decrease in freeboard will be relatively uniform and that the fishing pier will remain relatively flat and level.
 - b. Floatation units shall remain in their original condition, without cracks and show no signs of stress and damage which will result in premature failure.
 - c. Deck boards shall not show signs of dangerous deflection or deterioration to a degree that would necessitate replacement.
 - d. Deck screws shall not pull out or shear off.
 - e. Connectors and connector bolts shall not show excessive wear to the point of needing replacement during the warranty period.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- f. Steel members showing evidence of rusting due to poor galvanizing of steel during the warranty period shall be repaired by methods described and pre-approved in the Operations and Maintenance Manual.
 - g. At the end of the warranty period torsional deflections produced under dead loads and/or live loads at the end of fishing pier shall not be 50% greater than those allowed when the fishing pier was initially installed.
 - h. At the end of the warranty period the cross fishing pier slopes shall not be 50% greater than the maximum allowed when the fishing pier are initially installed.
 - i. Non-wear surfaces of bolts and nuts shall be replaced if they show signs of rust during the warranty period.
7. Items not meeting the conditions of this warranty and any damage caused to the fishing pier system due to failure of items or units covered by this warranty shall be repaired or replaced under the direction of, and at the expense of, the fishing pier manufacturer.
- B. The warranty shall be for a period of five years from the date on which the completed work is turned over to and accepted by the Owner.
- C. The Owner shall give notice of defects, covered by this warranty, by phone in emergencies and in writing to the fishing pier manufacturer immediately upon observance of the defects or when observed during the annual inspections.
- D. It is intended that the above allowed changes in freeboard, torsional deflections, and cross fishing pier slopes are due to normal deterioration of the fishing pier and/or absorption of water by floatation material. Such changes do not apply to effects caused by changed environmental factors such as increased loadings due to marine organisms or by loadings due to items added since the fishing pier was installed and which were not allowed for in the original design.

3.12 Annual Inspection

- A. The fishing pier manufacturer shall provide a qualified person to make an annual inspection of the floating fishing pier system every year throughout the warranty period, at the expense of the fishing pier manufacturer.
- B. The inspection shall be made in the presence of the Owner's representative at a time mutually agreeable to the Owner's and fishing pier manufacturer's representatives.
- C. The purpose of the inspection is to point out needed items of repair and where routine maintenance is required.
- D. Two copies of an inspection report covering the above items which need to be taken care of shall be prepared by the fishing pier manufacturer and sent to the Owner's representative.

END OF SECTION

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

SECTION 02900

RESTORATION

PART ONE - GENERAL

1.01 SUMMARY

- A. This Section includes the following:
 - 1. Surface restoration and final cleanup of all items removed or damaged by the Contractor shall include, but not be limited to:
 - a. Concrete Walks or Slabs
 - b. Bituminous Surfaces
 - c. Graveled Surfaces
 - d. Lawn Areas
 - 1) Note this does not include areas covered in Section 2921.
 - e. Area of proposed dredge disposal.

PART TWO - MATERIALS

2.01 MATERIALS

LAWN AREAS:

- A. Seed mixture consisting of Kentucky Blue Grass - 10%, Perennial Ryegrass – 20%, Hard Fescue – 30%, Creeping Red Fescue – 40%, shall be applied at a uniform rate of 220 pounds per acre.
- B. Topsoil shall be a dark, organic, natural surface soil free of clay lumps, peat or muck, subsoil, noxious weeds or other foreign matter such as roots, sticks, rocks over 1/2 inch in diameter and not frozen or muddy. Material shall meet with the approval of the Architect/Engineer and be furnished from off state lands.
- C. Mulching Materials shall meet MDOT Standard Specification (2003) section 917.
- D. Fertilizer shall be evenly applied at a rate which will provide 240 pounds per acre of chemical fertilizer nutrients, in equal proportions, (10-10-10), of Nitrogen, Phosphoric Acid, and Potash. Topsoil shall be a dark, organic, natural surface soil free of clay lumps, peat or muck, subsoil, noxious weeds or other foreign matter such as roots, sticks, rocks over 1/2 inch in diameter and not frozen or muddy. Material shall meet with the approval of the Architect/Engineer and be furnished from off state lands.
- E. Mulching Materials shall meet MDOT Standard Specification (2003) section 917.

PART THREE - EXECUTION

3.01 CONSTRUCTION METHODS

- A. All areas disturbed by the contractor including but not limited to construction areas, stockpile areas, access roads, material and equipment storage areas shall be topsoiled and seeded.
- B. The earthen areas to receive topsoil shall be at the required grade and properly trimmed. Topsoil shall be spread on the prepared areas to a depth of not less than 4". After spreading, any large clods and lumps of topsoil shall be broken up and pulverized. Stones and rocks over 1" in diameter, roots, litter, and all other foreign matter shall be raked up and disposed of by the contractor. Place topsoil only when it can be followed within a reasonable time by seeding operations.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- C. For areas to be seeded, chemical fertilizer shall be evenly applied on the prepared topsoil surface at a rate which will provide 240 pounds per acre of chemical fertilizer nutrients, in equal proportions of Nitrogen, Phosphoric Acid, and Potash, or as directed by the Architect/Engineer.
- D. Fertilizer spread by drill or broadcast methods will be placed or worked into the soil to a depth of one to two inches.
- E. The seed shall be sown by broadcast method following the application of the fertilizer and while the seed bed is in a friable condition. The seeding shall be floated and lightly compacted to incorporate the seed into the uppermost one-half inch of the soil.
- F. Mulch shall consist of straw and shall be spread over the surface to a uniform thickness to allow sunlight to penetrate and air to slowly circulate, but thick enough to shade the ground, reduce rate of water evaporation, and prevent or reduce water or wind erosion. Straw mulch shall be anchored by crimping in place. Erosion control blankets shall be installed on all slopes which are 3 horizontal to 1 vertical or steeper.
- G. Concrete Walks or Slabs - Shall be cut at contraction or expansion joints and replaced with air-entrained, 3500 psi concrete, meeting MDOT Grade 35S of the same thickness and finish as that which was removed.
- H. Bituminous Surfaces - Shall be cut back to straight-line joints. Replace with a 6" layer of compacted MDOT 22-A aggregate and a 2" layer of MDOT 13A Bituminous Mixture

END OF SECTION

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

SECTION 02920

LAWNS AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Seeding.
- 2. Lawn renovation.
- 3. Erosion-control material(s).

B. Related Sections:

- 1. Division 2 Section "Earth Moving" for excavation, filling and backfilling, and rough grading.

1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- C. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.
- D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.
- E. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Seed: Deliver seed in original sealed, labeled, and undamaged containers.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

1.6 PROJECT CONDITIONS

- A. Planting Restrictions: Seeding shall occur between May and October
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

PART 2 - PRODUCTS

2.1 SEED

- A. Seed mixture consisting of Kentucky Blue Grass - 10%, Perennial Ryegrass – 20%, Hard Fescue – 30%, Creeping Red Fescue – 40%

2.2 TOPSOIL

- A. Dark, organic, natural surfaced soil shall be free of clay lumps, peat or muck, subsoil, noxious weeds or other foreign matter such as roots, sticks, rocks over 1-1/2 inches in diameter; not frozen or muddy. Material shall meet with the Architect/Engineers approval at the source before commencing removal operations.
- B. Additional topsoil as needed to meet job requirements shall be furnished by the Contractor.

2.3 FERTILIZER

- A. Chemical fertilizer nutrients, in equal proportions, (10-0-10), of Nitrogen, Phosphoric Acid, and Potash.

2.4 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

PART 3 - EXECUTION

3.1 General

- A. The whole area within the construction limits of work, not covered by buildings, structures, paving, or otherwise designated areas, and all areas disturbed by construction outside the limit of work, shall be fine graded with four inches of topsoil, fertilized seeded, and mulched.

3.2 Preparing Earthbed

- A. Bring earthbed to the required grade and trim. Just before placing topsoil harrow all earthbeds including areas previously mulched or rye seeded for temporary erosion control. Harrow into a

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

friable condition with a disk, a spring tooth drag or spike tooth drag a minimum of three inches deep. All impressions left by equipment must be horizontal across the face of the slope.

3.3 Placing Topsoil

- A. Cover all areas to be seeded with topsoil. Spread topsoil on prepared areas at least three inches deep. Pulverize all large clods and lumps, rake out rocks more than one and one half inches in diameter, roots, litter, and all foreign matter.

3.4 Fertilizer

- A. Fertilizer shall be evenly applied at a rate which will provide 240 pounds per acre of chemical fertilizer nutrients, in equal proportions, (10-0-10), of Nitrogen, Phosphoric Acid, and Potash. Fertilizer spread by drill or broadcast methods will be placed or worked into the soil to a depth of one to two inches.

3.5 Seeding

- A. The seed shall be sown by broadcast method following the application of the fertilizer and while the seed bed is in a friable condition. The seeding shall be floated and lightly compacted to incorporate the seed into the uppermost one-half inch of the soil. Seed shall be applied at a uniform rate of 220 pounds per acre.
- B. Immediately before seeding, the topsoil surface shall be reworked until seed bed is a fine, pulverized, smooth seed bed.
- C. Seeding to be accomplished between May 1 and October 1.

3.6 Mulching

- A. Mulch shall be spread over the surface to a uniform thickness to allow sunlight to penetrate and air to slowly circulate, but thick enough to shade the ground, reduce rate of water evaporation, and prevent or reduce water or wind erosion. Straw mulch shall be anchored by crimping in place.

END OF SECTION

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

SECTION 03300

CAST-IN-PLACE CONCRETE

PART ONE - GENERAL

1.01 DESCRIPTION

- A. Work included: The work under this Section consists of, but is not necessarily limited to, furnishing and placing concrete as shown on the drawings. Also included are required forms, reinforcing, finishing and curing as specified herein.

1.02 QUALITY ASSURANCE

- A. Qualifications of workers and materials:
1. Provide at least one person, who shall be present at all times, during execution of this portion of the work. They shall be thoroughly familiar with the type of materials being installed, the reference standards, and the requirements of this work, and shall direct all work performed under this Section.
 2. The concrete batch plant facilities must be certified and meet the requirements of the National Ready Mixed Concrete Association.
- B. Testing and Inspection Services:
1. The Contractor will engage a testing and inspection service to evaluate concrete delivered to and placed at the site. Perform materials evaluation and test concrete mixes in accordance with requirements of ACI 301.
 2. Perform sampling and testing during concrete placement, in accordance with the following ASTM specifications:
 - a. C-172 - Method of Sampling Fresh Concrete.
 - b. C-143 - Standard Method of Test for Slump of Portland Cement Concrete.
 - c. C-173 - Air content, as determined by the Volumetric Method.
 - d. C-39 - Method of Test for Compressive Strength of Molded Concrete Cylinders. Note: for each class of concrete, provide one set for each 50 cu. yds. or fraction thereof. Set shall include:
 - 1) one specimen tested at 7 days
 - 2) two specimens tested at 28 days
 - 3) one retained for later testing if required
 - 4) Test results will be reported in writing to the Architect/ Engineer, Contractor, and concrete producer, on the same day, tests are made.
- C. Mix Proportion and Design:
1. Prepare design mixes for each type and strength by either laboratory trial mix or field test data bases as follows:
 - A. Proportion normal-weight concrete according to ACI 221.1 and ACI 301.
 2. Submit a written report to the Architect/Engineer for each proposed concrete mix at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed and are acceptable to the Architect/Engineer.
 3. Mix designs may be adjusted when material characteristics, job conditions, weather, test results or other circumstances warrant. Do not use revised concrete mixes until submitted to and accepted by the Architect/Engineer.
 4. Use air-entraining admixture in all concrete exposed to freezing and thawing. Air-entrainment shall conform to MDOT (2003 Ed.) Standard Specifications, Section 903.03, and shall be measured at 4-6% by volume.
 5. Minimum concrete compressive strength at 28 days shall meet the following schedule:
 - a. Footings, piers, columns, structural slabs: 3,000 psi.
 - b. Slabs on grade: 4,000 psi.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- c. Exterior walks, curbs, retaining walls: 3,500 psi.

PART TWO - PRODUCTS

2.01 MATERIAL

- A. Formwork:
1. General:
 - a. Forms shall be of sound and tight materials.
 - b. Forms for all exposed parts of concrete shall be made of plywood or metal, or of structural backing with plywood or metal liners to produce a smooth surface on the concrete.
 - c. Forms for unexposed parts may be of sound wood boarding, salvaged plywood, or of other approved material herein specified.
 2. Sealers:
 - a. All form sealers shall be first quality of their respective kinds and subject to the approval of the Architect/Engineer.
- B. Concrete Reinforcement:
1. All concrete reinforcement materials shall be new, free from rust, and comply with the following reference standards:
 - a. Where steel bars are shown, they shall comply with specifications for "Deformed and Plain Billet-Steel Bars for Concrete Reinforcement", ASTM A 615, A 616, or A 617, Grade 60.
 - b. Where welded wire fabric (W.W.F.) is shown or referred to, it shall comply with ASTM A 185.
- C. Cement:
1. Cement shall be Portland cement, type 1A, conforming to ASTM C-150.
- D. Aggregate:
1. General:
 - a. All aggregate shall meet the requirements of ASTM C-33 and MDOT (1990 Ed.) Standard Specifications, Section 8.02.
 2. Coarse Aggregate:
 - a. Coarse aggregate shall meet MDOT specifications for Class 6A or 6AA, and be composed of stone or crushed rock of hard durable pieces, well graded, and free from clay or organic substance. Maximum size not to exceed one-fifth of the minimum dimension of the concrete member in which placed and not to exceed three-fourths of clear spacing between reinforcing steel. Maximum size aggregate for floor slabs and sidewalks shall be 3/4 inch.
 3. Fine Aggregate:
 - a. Fine aggregate shall meet MDOT specifications for Class 2NS, and be composed of hard natural sand, free of clay or other material, which will have a deleterious effect on the finished product.
- E. Water:
1. Water shall be clean and free from injurious amounts of foreign matter.
- F. Miscellaneous Concrete Accessories:
1. Expansion Joint Material:
 - a. Fiber-type Federal Specification No. HHF-341F, Type III.
 - b. Vinylex, zip-strip by Form Tech Concrete Forms, Inc. Ph. 248-344-8260.
 2. Joint Sealer:

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- a. Federal Specification SS-S200D, placed above expansion and control joint.
 - 3. Under Slab Moisture Barrier:
 - a. Acceptable Manufacturers:
 - 1) "Zero Perm" - Alumiseal Corp., Stamford, CT
 - 2) "Moistop" - Fortifiber Corp., Howard City, MI
 - 3) "T-65" - Griffolyn, Reef Industries, Inc., Houston, TX
 - 4. Concrete curing compound/sealer/hardener:
 - a. Acceptable manufacturers:
 - 1) "Super-Trete 110-VOC" – Cresset Chemical Co., Weston, OH
 - 2) "VOCOMP-25" – W.R. Meadows, Inc., Hampshire, IL
 - 3) "Cure-R" – L&M Construction Chemicals, Inc., Omaha, NE
 - 5. Floor Dividers:
 - a. Provide continuous stainless steel divider strip between tile and concrete. See plans for size and locations.
- G. Anchor Bolts:
- 1. Steel anchor bolts shall comply with ASTM A307, with heavy hexagonal nuts. See drawings for sizes and locations.

PART THREE - EXECUTION

3.01 INSTALLATION

- A. Formwork:
- 1. General:
 - a. Construct all required forms to be substantial, sufficiently tight to prevent leakage of mortar, and able to withstand excessive deflection when filled with wet concrete.
 - b. Layout:
 - 1) Form all required cast-in-place concrete to the shapes, sizes, lines, and dimensions indicated on the drawings.
 - 2) Make proper provisions for all openings, offsets, recesses, anchorage, blocking, and other features of the work as indicated on the drawings or required by the various sections of these Specifications.
- B. Embedded Items:
- 1. Set all required steel frames, angles, grilles, bolts, inserts, and other such items required to be anchored in the concrete before the concrete is placed.
- C. Bracing:
- 1. Properly brace and tie the forms together so as to maintain position and shape.
- D. Steel Reinforcement:
- 1. Position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, and hangers, as required. Where splices are required, lap bars a minimum of 18".
- E. Placing Concrete:
- 1. General:
 - a. Place concrete in compliance with practices and recommendations of the American Concrete Institute (ACI) and as herein specified.

**LAKE FANNY HOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

2. Method:
 - a. Convey concrete from mixer to place of final deposit by methods that will prevent separation and loss of materials.
 - b. For chuting, pumping, and pneumatically conveying concrete, use only equipment of such size and design as to ensure a practically continuous flow of concrete at the delivery end without loss or separation of materials.
 - c. Deposit concrete as nearly as possible in its final position to avoid segregation due to rehandling and flowing.
 - d. Place concrete as dry as possible consistent with good workmanship, never exceeding the maximum recommended slump.
 - e. Never place concrete in water or allow water to come in contact with concrete until it has hardened sufficiently to not be damaged.
 3. Rate of Placement:
 - a. Place concrete at such a rate that concrete is at all times plastic and flows readily between bare bars.
 4. Compaction:
 - a. Thoroughly consolidate all concrete by suitable means during placement, working it around all embedded fixtures and into corners of forms.
 - b. During placement, thoroughly compact the concrete by hand tamping and by mechanical vibration.
 - c. Vibrating of forms will not be allowed.
- F. Joints:
1. Construction Joints:
 - a. Construction joints in concrete shall be keyed together and the design reinforcement shall be properly extended through the joints.
 2. Movement (Control) Joints:
 - a. Movement (control) joints shall be at least 1/4 the depth of the slab (1/5 the depth of the slab in passageway and mechanical room – to avoid in-floor heat tubing). See plans for locations.
 - b. Where control joints are called for, they shall be sawn the morning after the concrete has been placed.
- G. Adjoining Concrete and Bituminous Surfaces:
1. Where new concrete flatwork adjoins an existing bituminous surface, the Contractor shall make a neat vertical saw cut along the full length of the bituminous material. The saw cut must be made to the full depth of the material.
 2. The concrete flatwork shall then be finished so that it is dead flush with the existing bituminous surface.
 3. It shall be the responsibility of the Contractor to dispose of the waste material in a manner acceptable to the Architect/Engineer.
- H. Leveling and Finishing:
1. General:
 - a. Concrete slabs shall be brought to proper lines of level and pitch by screeding and floating in order to remove all humps and hollows to produce true even surfaces.
 - b. Tamp slabs with suitable equipment to depress large aggregate and then push float as necessary.
 - c. Slabs where concrete finish is exposed shall have a steel trowel finish. Interior or exterior surfaces that permit standing water will not be permitted.
 - d. All exterior concrete flatwork shall be steel troweled and finished with a fine hair broom.
 - e. Handicap ramp shall be finished with a coarse-hair broom or a corrugated bull float.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

2. Exterior Finishes:
 - a. Surfaces Below Grade: Surfaces below grade or not exposed shall have rough form finish. After forms and ties are removed, tie holes and defects shall be patched, fins exceeding 1/4" in height shall be chipped off or rubbed off. The remainder of wall surface may be left with the texture imparted by the forms.

3. Curing and protecting:
 - a. Unless otherwise approved, cure concrete by keeping all exposed surfaces wet for a minimum of three days. Concrete shall be kept from freezing at all times.
 - b. Unless equipment is utilized to protect concrete from freezing, no concrete shall be placed unless the temperature is above 40°F and rising.
 - c. Enclosures and heating equipment to be used for protection of concrete construction during freezing weather shall be erected, tested and approved by the Architect/Engineer before proceeding with construction. Equipment and enclosures shall maintain a temperature of at least 50°F for a period of five days after concrete is placed.
 - d. Calcium chloride used as an accelerator during cold weather shall not exceed 2% by weight.

END OF SECTION

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

SECTION 06730

COMPOSITE WOOD DECKING

PART ONE - GENERAL

1.01 DESCRIPTION

- A. The Work contained in this Section is only required should the owner choose Additive Alternate #2.
- B. Work Included: The work under this Section includes, but is not necessarily limited to, the furnishing and installation of all materials, labor, equipment and services necessary for installation of composite wood decking on the gangway and floating fishing pier and related items as indicated on the Drawings, herein specified, and as necessary for the proper and complete performance of this work.
- C. Related work described elsewhere:
 - 1. FLOATING FISHING PIER.....Section 02891
 - a. Additive alternate is for composite wood decking as specified in lieu of wood decking as specified in the above section.

1.02 QUALITY ASSURANCE

- A. Materials specified shall comply with the requirements of the following agencies.
 - 1. American Institute of Timber Construction (AITC).
 - 2. Western Wood Products Association (WWPA)
 - 3. American Society for Testing and Materials (ASTM)
- B. All members shall be cut from lumber which bears the proper grade-mark stamp of a recognized grading association or licensed lumber inspection agency.

1.03 SUBMITTALS

- A. Shop drawings shall be submitted to the Architect/Engineer for approval, showing sizes, profiles, surface finishes, and performance characteristics and design values.
- B. Manufacturers instructions on care and cleaning
- C. Color samples, where applicable, shall be submitted to the Architect/Engineer for approval prior to fabrication.

1.04 PRODUCT HANDLING

- A. Use all means necessary to protect the materials of this section before, during, and after installation.
- B. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect/Engineer.

PART TWO – PRODUCTS

2.01 MATERIALS

- A. Composite wood:
 - 1. Composition: Reclaimed wood and plastic with integral coloring
 - a. Decking: Nominally 2 x 6 inches
 - b. Characteristics:

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- 1) Abrasion resistance: 0.01 inch wear per 1000 revolutions, tested to ASTM D2394.
 - 2) Hardness: 1124 pounds, tested to ASTM D143.
 - 3) Self ignition temperature: 743 degrees F, tested to ASTM D1929.
 - 4) Flash ignition temperature: 698 degrees F, tested to ASTM D1929.
 - 5) Flame spread rating: 80, tested to ASTM E84.
 - 6) Water absorption, 24 hour immersion, tested to ASTM D1037:
 - a) Sanded surface: 4.3 percent.
 - b) Unsanded surface: 1.7 percent.
 - 7) Thermal expansion coefficient, 36 inch long samples:
 - a) Width: 35.2×10^{-6} to 42.7×10^{-6}
 - b) Length: 16.1×10^{-6} to 19.2×10^{-6}
 - 8) Fastener withdrawal, tested to ASTM D1761:
 - a) Nail: 163 pounds per inch.
 - b) Screw: 558 pounds per inch.
 - 9) Static coefficient of friction:
 - a) Dry: 0.53 to 0.55, tested to ASTM D2047
 - b) Dry: 0.59 to 0.70, tested to ASTM F1679
 - c) Wet: 0.70 to 0.75, tested to ASTM F1679
 - 10) Fungus resistance, white and brown rot: No decay, tested to ASTM D1413
 - 11) Termite resistance: 9.6 rating, tested to AWPA E-1
 - 12) Specific gravity: 0.91 to 0.95, tested to ASTM D2395
 - 13) Compression:
 - a) Parallel: 1806 PSI ultimate, 550 PSI design, tested to ASTM D198
 - b) Perpendicular: 1944 PSI ultimate, 625 PSI design, tested to ASTM D143
 - 14) Tensile strength: 854 PSI ultimate, 250 PSI design, tested to ASTM D198
 - 15) Shear strength: 561 PSI ultimate, 200 PSI design, tested to ASTM D143
 - 16) Modulus of rupture: 1423 PSI ultimate, 250 PSI design, tested to ASTM D4761
 - 17) Modulus of elasticity: 175,000 PSI ultimate, 100,000 PSI design, tested to ASTM D476
 - 18) Thermal conductivity: 1.57 BTU per inch per hour per square foot at 85 degrees F, tested to ASTM C177.Design
2. Fasteners:
- a. Fasteners shall be hot dipped galvanized or stainless steel.

PART THREE – EXECUTION

3.01 INSTALLATION

- A. Install composite wood in accordance with manufacturer's instructions:
1. Pre-drill fastener holes located closer than 1 inch from edges
 2. Cut ends square and true
 3. Do not use composite wood products as structural members.
 4. Do not exceed maximum spans recommended by manufacturers recommendations
 5. Place boards perpendicular to supports
 6. Stagger end joints in adjacent rows at least one support
 7. Leave expansion spaces between abutting boards and between boards and adjacent construction:
 - a. Gaps between boards: 1/8 inch at ambient temperatures of 60 degrees F and above and 3/16 inch at ambient temperatures below 60 degrees F.
 - b. Gaps at board ends: 1/4 inch at ambient temperatures of 60 degrees F and above and 3/8 inch at ambient temperatures below 60 degrees F.

**LAKE FANNY HOOE BOATING ACCESS SITE
FLOATING FISHING PIER
Project No. 24-3207**

- c. Gaps between boards and adjacent construction: 1/4 inch at ambient temperatures of 60 degrees F and above and 1/2 inch at ambient temperatures below 60 degrees F.
- 8. Place boards to span three or more supports
- 9. Fasten each board to each support with two fasteners

END OF SECTION

APPENDIX I
PREVAILING WAGE RATES



STATE OF MICHIGAN

JENNIFER M. GRANHOLM
GOVERNOR

DEPARTMENT OF ENERGY, LABOR & ECONOMIC GROWTH
LANSING

STANLEY "SKIP" PRUSS
DIRECTOR

REQUIREMENTS OF THE PREVAILING WAGES ON STATE PROJECTS ACT, PUBLIC ACT 166 OF 1965

The Michigan Department of Labor & Economic Growth determines prevailing rates pursuant to the Prevailing Wages on State Projects Act, Public Act 166 of 1965, as amended. The purpose of establishing prevailing rates is to provide minimum rates of pay that must be paid to workers on construction projects for which the state or a school district is the contracting agent and which is financed or financially supported by the state. By law, prevailing rates are compiled from the rates contained in collectively bargained agreements which cover the locations of the state projects. The official prevailing rates provide an hourly rate which includes wage and fringe benefit totals for designated construction mechanic classifications. The overtime rates also include wage and fringe benefit totals. Please pay special attention to the overtime and premium pay requirements. Prevailing wage is satisfied when wages plus fringe benefits paid to a worker are equal to or greater than the required rate.

State of Michigan responsibilities under the law:

- The department establishes the prevailing rate for each classification of construction mechanic **requested by a contracting agent** prior to contracts being let out for bid on a state project.

Contracting agent responsibilities under the law:

- If a contract is not awarded or construction does not start within 90 days of the date of the issuance of rates, a re-determination of rates must be requested by the contracting agent.
- Rates for classifications needed but not provided on the Prevailing Rate Schedule, **must** be obtained **prior** to contracts being let out for bid on a state project.
- The contracting agent, by written notice to the contractor and the sureties of the contractor known to the contracting agent, may terminate the contractor's right to proceed with that part of the contract, for which less than the prevailing rates have been or will be paid, and may proceed to complete the contract by separate agreement with another contractor or otherwise, and the original contractor and his sureties shall be liable to the contracting agent for any excess costs occasioned thereby.

Contractor responsibilities under the law:

- Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing rates prescribed in a contract.
- Every contractor and subcontractor shall keep certified payrolls, as used in the industry, of each and every construction mechanic, and verification of such certified payroll in writing by either a representative or auditor/certified accountant at the end of such a

DELEG is an equal opportunity employer/program.

Auxiliary aids, services and other reasonable accommodations are available upon request to individuals with disabilities.

certified payroll. These records should include the occupation and indicate the hours worked on each project for each classification and the actual wages and benefits paid. This record shall be available for reasonable inspection by the contracting agent or the department.

- Each contractor or subcontractor is separately liable for the payment of the prevailing rate to its employees.
- The prime contractor is responsible for advising all subcontractors of the requirement to pay the prevailing rate prior to commencement of work.
- The prime contractor is secondarily liable for payment of prevailing rates that are not paid by a subcontractor.
- A construction mechanic shall only be paid the apprentice rate if registered with the United States Department of Labor, Bureau of Apprenticeship and Training and the rate is included in the contract.

Enforcement:

A person who has information of an alleged prevailing wage violation on a state project may file a complaint with the Wage & Hour Division. The department will investigate and attempt to resolve the complaint informally. During the course of an investigation, if the requested records and posting certification are not made available in compliance with Section 5 of Act 166, the investigation will be concluded and a referral to the Office of Attorney General for civil action will be made. The Office of Attorney General will pursue costs and fees associated with a lawsuit if filing is necessary to obtain records.

A violation of Act 166 may result in the contractor's name being added to the Prevailing Wage Act Violators List published on the division's website, updated monthly. This list includes the names and addresses of contractors and subcontractors the division has found in violation of Act 166 based on complaints from individuals and third parties. The Prevailing Wage Act Violators List is intended to inform contracting agents of contractors that have violated Act 166 for use in determining who should receive state-funded projects.

Official Request #: 1235
Requestor: DEPT. OF NATURAL RESOURCES
Project Description: INSTALL FLOATING FISHING PIER
Project Number: LAKE FANNIE HOOE-FORT WILKINS STATE PARK

Keweenaw County
Official 2009 Prevailing Wage Rates for State Funded Projects

Issue Date: 9/22/2009
Contract must be awarded by: 12/21/2009

<u>Classification</u>		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description					
Bricklayer						
	Bricklayer, marble & stone mason, mosaic worker, plasterer, tuck pointer, tile layer, terrazzo worker, pointer, caulker & cleaner	BR6-2 5/6/2009	\$39.82	\$52.26	\$64.70	H H D X H H D D Y
Apprentice Rates:						
	1st year		\$31.11	\$39.20	\$47.28	
	2nd year		\$33.60	\$42.93	\$52.26	
	3rd year		\$36.09	\$46.66	\$57.24	
Carpenter						
	Carpenter, Drywall Taper & Finisher, & Floor Layer	CA1510-C 6/2/2008	\$37.29	\$49.82	\$62.35	H H D H H H D D Y
Apprentice Rates:						
	1st 6 months		\$27.27	\$34.79	\$42.31	
	2nd 6 months		\$28.52	\$36.67	\$44.81	
	3rd 6 months		\$29.77	\$38.54	\$47.31	
	4th 6 months		\$31.03	\$40.43	\$49.83	
	5th 6 months		\$32.28	\$42.31	\$52.33	
	6th 6 months		\$33.53	\$44.18	\$54.83	
	7th 6 months		\$34.78	\$46.05	\$57.33	
	8th 6 months		\$36.04	\$47.95	\$59.85	
	Piledriver	CA1510-P 6/2/2008	\$37.49	\$50.12	\$62.75	H H D H H H D D Y
Apprentice Rates:						
	1st 6 months		\$27.39	\$34.97	\$42.55	
	2nd 6 months		\$28.65	\$36.86	\$45.07	
	3rd 6 months		\$29.91	\$38.75	\$47.59	
	4th 6 months		\$31.17	\$40.64	\$50.11	
	5th 6 months		\$32.44	\$42.55	\$52.65	
	6th 6 months		\$33.70	\$44.43	\$55.17	
	7th 6 months		\$34.96	\$46.33	\$57.69	
	8th 6 months		\$36.23	\$48.23	\$60.23	
Cement Mason						
	Cement Mason	BR6-CM 5/6/2009	\$39.82	\$52.26	\$64.70	H H D X H H D D Y
	Cement Mason	PL16-16 5/30/2008	\$36.95	\$49.98	\$63.00	H H H H H H D Y
Apprentice Rates:						
	1st year		\$27.83	\$36.30	\$44.76	
	2nd year		\$30.44	\$40.21	\$49.98	
	3rd year		\$33.04	\$44.11	\$55.18	

Electrician

Sound & Communications Installer/Technician EC-219-SC 6/1/2009 \$31.43 \$41.67 \$51.91 H H H H H H H D Y

Apprentice Rates:

1st period	\$23.24	\$29.39	\$35.53
2nd period	\$25.29	\$32.46	\$39.63
3rd period	\$26.31	\$33.99	\$41.67
4th period	\$27.33	\$35.52	\$43.71
5th period	\$28.36	\$37.07	\$45.77
6th period	\$29.39	\$38.62	\$47.83

Inside wireman for work above \$130,000 total value. EC-219-ZB-above 6/1/2009 \$44.40 \$59.12 \$73.85 H H H H H H H D Y

Apprentice Rates:

6,500-8,000 hours	\$37.96	\$51.21	\$64.47
0-1,000 hours	\$22.46	\$29.09	\$35.72
1,000-2,000 hours	\$23.93	\$31.30	\$38.66
2,000-3,500 hours	\$28.00	\$36.83	\$45.67
3,500-5,000 hours	\$32.07	\$42.38	\$52.69
5,000-6,500 hours	\$35.01	\$46.79	\$58.57

Inside wireman for work below \$130,000 total value. EC-219-ZB-below 6/2/2009 \$39.85 \$52.30 \$64.75 H H H H H H H D Y

Apprentice Rates:

0-1,000 hours	\$20.40	\$26.00	\$31.60
1,000-2,000 hours	\$21.65	\$27.88	\$34.10
2,000-3,500 hours	\$25.27	\$32.74	\$40.21
3,500-5,000 hours	\$28.88	\$37.60	\$46.31
5,000-6,500 hours	\$31.37	\$41.33	\$51.29
6,500-8,000 hours	\$33.86	\$45.07	\$56.27

Ironworker

For work over \$10 million: Structural, Ornamental, Machinery Rigger & Reinforcing Ironworker; installation of sheet metal siding IR-8-A 9/3/2009 \$46.58 \$66.10 \$85.61 H H D H D D D D Y

A 4-10 work week allowed Monday thru Thursday. Friday may be used as a make-up day. Hours in excess of 40 must be paid time and one half.

Apprentice Rates:

0-750 hours	\$24.67	\$36.84	\$49.00
751-999 hours	\$31.74	\$43.91	\$56.07
2nd 1,000 hours	\$35.35	\$49.33	\$63.29
3rd 1,000 hours	\$36.66	\$51.29	\$65.91
4th 1,000 hours	\$37.96	\$53.24	\$68.51
5th 1,000 hours	\$39.27	\$55.21	\$71.13
6th 1,000 hours	\$40.58	\$57.17	\$73.75

For work under \$10 Million: Structural, Ornamental, Machinery Rigger & Reinforcing Ironworker; pre-engineered metal buildings IR-8-B 9/3/2009 \$43.49 \$61.46 \$79.43 H H D H D D D D Y

For work over \$10 million: Structural, Ornamental, Machinery Rigger & Reinforcing Ironworker; installation of sheet metal siding

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

A 4-10 work week allowed Monday thru Thursday.
 Friday may be used as a make-up day. Hours in excess
 of 40 must be paid time and one half.

Apprentice Rates:

0-750 hours	\$24.67	\$36.84	\$49.00
751-999 hours	\$31.74	\$43.91	\$56.07
2nd 1,000 hours	\$35.35	\$49.33	\$63.29
3rd 1,000 hours	\$36.66	\$51.29	\$65.91
4th 1,000 hours	\$37.96	\$53.24	\$68.51
5th 1,000 hours	\$39.27	\$55.21	\$71.13
6th 1,000 hours	\$40.58	\$57.17	\$73.75

Laborer

Class A Laborer - construction laborer on building and heavy construction work, storm, and sanitary sewers on all construction sites and streets which are not included in the road builder rates, tool crib attendant, civil engineer helper, rodman, oxi-gun operator, propane or acetylene cutting torch operator, motor driven buggies, chipping hammers, tamping machines, green cutting, sand blasters, mason tenders, mortar mixers, marterial mixers, vibrator operators, concrete mixers, laborers with concrete crew, mixer to pour, including pour time from trucks.

L1329-B-A 5/7/2009 \$31.48 \$41.54 \$51.60 H H D H D D D D Y

All hours worked on Saturday except as an inclement weather or M-F holiday make up day, must be paid @ overtime rate indicated

Apprentice Rates:

0 - 1,000 hours	\$26.45	\$34.00	\$41.54
1,001 - 2,000 hours	\$27.46	\$35.51	\$43.56
2,001 - 3,000 hours	\$28.46	\$37.01	\$45.56
3,001 - 4,000 hours	\$30.47	\$40.02	\$49.58

Class B Laborer - Cement gun nozzleman, blasters, miners, drillers, buster operators, layers of all non-metallic pipe

L1329-B-B 5/7/2009 \$31.88 \$42.14 \$52.40 H H D H D D D D Y

All hours worked on Saturdays, except as an inclement weather or M-F holiday make up day must be paid @

Class C Laborer - caisson worker & airtrack

L1329-B-C 5/7/2009 \$32.23 \$42.67 \$53.10 H H D H D D D D Y

All hours worked on Saturday except as an inclement weather or M-F holiday make up day, must be paid @ overtime rate indicated.

Class E Laborer - digester, tanks & kilns

L1329-B-D 5/7/2009 \$33.53 \$44.62 \$55.70 H H D H D D D D Y

All hours worked on Saturday except as an inclement weather or M-F holiday make up day, must be paid @ overtime rate indicated.

Laborer Underground - Tunnel, Shaft & Caisson

Class I - Tunnel, shaft and caisson laborer, dump man, shanty man, hog house tender, testing man (on gas), and watchman.

LAUCT-Z2-1 9/10/2009 \$32.34 \$43.03 \$53.71 H H H H H H H D Y

Apprentice Rates:

0-1,000 work hours	\$27.37	\$35.57	\$43.77
1,001-2,000 work hours	\$28.37	\$37.07	\$45.77
2,001-3,000 work hours	\$29.36	\$38.56	\$47.75
3,001-4,000 work hours	\$31.35	\$41.54	\$51.73

Official Request #1235

Requestor: DEPT. OF NATURAL RESOURCES
 Project Description: INSTALL FLOATING FISHING PIER

Project Number: LAKE FANNIE HOOE-FORT WILKINS STATE PARK
 County: Keweenaw

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Class II - Manhole, headwall, catch basin builder, bricklayer tender, mortar man, material mixer, fence erector, and guard rail builder	LAUCT-Z2-2	9/10/2009	\$32.43	\$43.16	\$53.89	H H H H H H H D Y
---	------------	-----------	---------	---------	---------	-------------------

Apprentice Rates:

0-1,000 work hours	\$27.44	\$35.68	\$43.91
1,001-2,000 work hours	\$28.44	\$37.18	\$45.91
2,001-3,000 work hours	\$29.44	\$38.68	\$47.91
3,001-4,000 work hours	\$31.43	\$41.66	\$51.89

Class III - Air tool operator (jack hammer man, bush hammer man and grinding man), first bottom man, second bottom man, cage tender, car pusher, carrier man, concrete man, concrete form man, concrete repair man, cement invert laborer, cement finisher, concrete shoveler, conveyor man, floor man, gasoline and electric tool operator, gunnite man, grout operator, welder, heading dinky man, inside lock tender, pea gravel operator, pump man, outside lock tender, scaffold man, top signal man, switch man, track man, tugger man, utility man, vibrator man, winch operator, pipe jacking man, wagon drill and air track operator and concrete saw operator (under 40	LAUCT-Z2-3	9/10/2009	\$32.53	\$43.31	\$54.09	H H H H H H H D Y
--	------------	-----------	---------	---------	---------	-------------------

Apprentice Rates:

0-1,000 work hours	\$27.51	\$35.78	\$44.05
1,001-2,000 work hours	\$28.52	\$37.30	\$46.07
2,001-3,000 work hours	\$29.52	\$38.80	\$48.07
3,001-4,000 work hours	\$31.53	\$41.81	\$52.09

Class IV - Tunnel, shaft and caisson mucker, bracer man, liner plate man, long haul dinky driver and well point	LAUCT-Z2-4	9/10/2009	\$32.69	\$43.55	\$54.41	H H H H H H H D Y
--	------------	-----------	---------	---------	---------	-------------------

Apprentice Rates:

0-1,000 work hours	\$27.63	\$35.96	\$44.29
1,001-2,000 work hours	\$28.65	\$37.49	\$46.33
2,001-3,000 work hours	\$29.66	\$39.00	\$48.35
3,001-4,000 work hours	\$31.68	\$42.04	\$52.39

Class V - Tunnel, shaft and caisson miner, drill runner, keyboard operator, power knife operator, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars)	LAUCT-Z2-5	9/10/2009	\$32.95	\$43.94	\$54.93	H H H H H H H D Y
---	------------	-----------	---------	---------	---------	-------------------

Apprentice Rates:

0-1,000 work hours	\$27.83	\$36.26	\$44.69
1,001-2,000 work hours	\$28.85	\$37.79	\$46.73
2,001-3,000 work hours	\$29.88	\$39.34	\$48.79
3,001-4,000 work hours	\$31.93	\$42.41	\$52.89

Class VI - Dynamite man and powder man.	LAUCT-Z2-6	9/10/2009	\$33.26	\$44.41	\$55.55	H H H H H H H D Y
---	------------	-----------	---------	---------	---------	-------------------

Apprentice Rates:

0-1,000 work hours	\$28.06	\$36.60	\$45.15
1,001-2,000 work hours	\$29.10	\$38.16	\$47.23
2,001-3,000 work hours	\$30.14	\$39.72	\$49.31
3,001-4,000 work hours	\$32.22	\$42.84	\$53.47

Landscape Laborer

Landscape Specialist includes air, gas, and diesel equipment operator, lawn sprinkler installer on landscaping work where seeding, sodding, planting, cutting, trimming, backfilling, rough grading or maintenance of landscape projects occurs. Sundays paid at time & one half. Holidays paid at double	LLAN-Z2-A	7/9/2009	\$24.65	\$33.97	\$43.28	X X H X X X H D Y
--	-----------	----------	---------	---------	---------	-------------------

Official Request #1235

Requestor: DEPT. OF NATURAL RESOURCES
Project Description: INSTALL FLOATING FISHING PIER

Project Number: LAKE FANNIE HOOE-FORT WILKINS STATE PARK
County: Keweenaw

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

All work pertaining to landscaping where seeding, sodding, planting, cutting, trimming, backfilling, rough grading or maintaining of landscape projects occurs which may include small power tool operator, lawn sprinkler installer helper, material mover, truck driver. Sundays paid at time & one half. Holidays paid at double time.

LLAN-Z2-B	7/9/2009	\$20.45	\$27.67	\$34.88	X	X	H	X	X	X	H	D	Y
-----------	----------	---------	---------	---------	---	---	---	---	---	---	---	---	---

Operating Engineer - Marine Construction

Diver/Wet Tender, Engineer (hydraulic dredge)	GLF-1	5/6/2009	\$54.09	\$71.02	\$87.94	X	X	H	H	H	H	H	D	Y
---	-------	----------	---------	---------	---------	---	---	---	---	---	---	---	---	---

Holiday pay= \$104.86 per hour

Subdivision of county all Great Lakes, islands therein, & connecting & tributary waters

Crane/Backhoe Operator, 70 ton or over Tug Operator, Mechanic/Welder, Assistant Engineer (hydraulic dredge), Leverman (hydraulic dredge), Diver Tender	GLF-2	5/6/2009	\$52.59	\$68.77	\$84.94	X	X	H	H	H	H	H	D	Y
--	-------	----------	---------	---------	---------	---	---	---	---	---	---	---	---	---

Holiday pay = \$101.11 per hour

Subdivision of county All Great Lakes, islands therein, & connecting & tributary waters

Deck Equipment Operator, Machineryman, Maintenance of Crane, Tug/Launch Operator, Loader, Dozer on Barge, Deck Machinery	GLF-3	5/6/2009	\$49.04	\$63.44	\$77.84	X	X	H	H	H	H	H	D	Y
--	-------	----------	---------	---------	---------	---	---	---	---	---	---	---	---	---

Holiday pay = \$92.24 per hour

Subdivision of county All Great Lakes, islands therein, & connecting & tributary waters

Deck Equipment Operator, (Machineryman/Fireman), (4 equipment units or more), Off Road Trucks, Deck Hand, Tug Engineer, & Crane Maintenance 50 ton capacity and under or Backhoe 115,000 lbs or less, Assistant Tug Operator	GLF-4	5/6/2009	\$44.19	\$56.17	\$68.14	X	X	H	H	H	H	H	D	Y
--	-------	----------	---------	---------	---------	---	---	---	---	---	---	---	---	---

Subdivision of county All Great Lakes, islands therein, & connecting & tributary waters

Operating Engineer General Construction & Underground

Crane 120' boom & jib	EN-324UP-120GU	5/21/2009	\$45.57	\$59.51	\$73.45	H	H	H	H	H	H	H	D	Y
Crane 140' boom & jib	EN-324UP-140GU	5/21/2009	\$45.82	\$59.89	\$73.95	H	H	H	H	H	H	H	D	Y
Crane with 300' or longer main boom & jib	EN-324UP-300GU	5/21/2009	\$47.57	\$62.51	\$77.45	H	H	H	H	H	H	H	D	Y
Crane with 400' or longer main boom & jib	EN-324UP-400GU	5/21/2009	\$49.07	\$64.76	\$80.45	H	H	H	H	H	H	H	D	Y
Class A- Regular equipment operator, crane, dozer, front end loader, pumpcrete, squeeze crete, job mechanic, welder, concrete pump, excavator, milling & pulverizing machines, & scraper (self-propelled & tractor drawn).	EN-324UP-AGU	5/21/2009	\$45.07	\$58.76	\$72.45	H	H	H	H	H	H	H	D	Y

Apprentice Rates:

1st 6 months	\$36.36	\$45.94	\$55.53
2nd 6 months	\$37.73	\$48.00	\$58.27
3rd 6 months	\$39.10	\$50.06	\$61.01
4th 6 months	\$40.47	\$52.11	\$63.75
5th 6 months	\$41.83	\$54.15	\$66.47
6th 6 months	\$43.20	\$56.21	\$69.21

Class B- Air-Trac Drill, boom truck (non-swing), concrete mixers, material hoist and tigger, pumps 6" and over, beltcrete, sweeping machine, trencher, head grease man, winches, well points and freeze systems	EN-324UP-BGU	5/21/2009	\$41.82	\$53.89	\$65.95	H	H	H	H	H	H	H	D	Y
---	--------------	-----------	---------	---------	---------	---	---	---	---	---	---	---	---	---

Official Request #1235

Requestor: DEPT. OF NATURAL RESOURCES
Project Description: INSTALL FLOATING FISHING PIER

Project Number: LAKE FANNIE HOOE-FORT WILKINS STATE PARK
County: Keweenaw

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Class C- Fork Truck, air compressor, conveyer, concrete saw, farm tractor(without attachments), generator, guard post driver, mulching machines, pumps under 6", welding machines, grease man	EN-324UP-CGU 5/21/2009	\$41.24	\$53.02	\$64.79	H H H H H H H D Y
Class D- Oiler, fireman, heater operator, brock concrete breaker, elevators (other than passenger), end dump & skid steer	EN-324UP-DGU 5/21/2009	\$40.30	\$51.61	\$62.91	H H H H H H H D Y
Crane 220' boom & jib	EN-324UP-GU 5/21/2009	\$46.07	\$60.26	\$74.45	H H H H H H H D Y
Mechanic w/ truck & tools	EN-324UP-MGU 5/21/2009	\$46.57	\$61.01	\$75.45	H H H H H H H D Y
Operating Engineer Steel Work					
Crane 120' boom & jib	EN-324UP-120S 5/21/2009	\$45.97	\$60.11	\$74.25	H H H H H H H D Y
Crane 140' boom & jib	EN-324UP-140S 5/21/2009	\$46.22	\$60.49	\$74.75	H H H H H H H D Y
Crane 220' boom & jib	EN-324UP-220S 5/21/2009	\$46.47	\$60.86	\$75.25	H H H H H H H D Y
Crane with 300' boom & jib	EN-324UP-300S 5/21/2009	\$47.97	\$63.11	\$78.25	H H H H H H H D Y
Crane with 400' boom & jib	EN-324UP-400S 5/21/2009	\$49.47	\$65.36	\$81.25	H H H H H H H D Y
Compressor, Welder & Forklift	EN-324UP-CWS 5/21/2009	\$42.22	\$54.49	\$66.75	H H H H H H H D Y
Mechanic w/ truck & tools	EN-324UP-MS 5/21/2009	\$46.97	\$61.61	\$76.25	H H H H H H H D Y
Oiler & Fireman	EN-324UP-OFS 5/21/2009	\$40.92	\$52.54	\$64.15	H H H H H H H D Y
Operator	EN-324UP-OS 5/21/2009	\$45.47	\$59.36	\$73.25	H H H H H H H D Y

Apprentice Rates:

1st 6 months	\$36.64	\$46.36	\$56.09
2nd 6 months	\$38.03	\$48.45	\$58.87
3rd 6 months	\$39.42	\$50.54	\$61.65
4th 6 months	\$40.81	\$52.62	\$64.43
5th 6 months	\$42.19	\$54.69	\$67.19
6th 6 months	\$43.58	\$56.77	\$69.97

Painter

Painter	PT-1011 7/24/2007	\$27.09	\$36.60	\$46.10	H H H H H H H D N
---------	----------------------	---------	---------	---------	-------------------

Apprentice Rates:

1st 1000 hours	\$19.49	\$25.20	\$30.90
2nd 1000 hours	\$20.44	\$26.62	\$32.80
3rd 1000 hours	\$21.39	\$28.04	\$34.70
4th 1000 hours	\$22.34	\$29.47	\$36.60
5th 1000 hours	\$23.29	\$30.90	\$38.50
6th 1000 hours	\$24.24	\$32.32	\$40.40
7th 1000 hours	\$25.19	\$33.74	\$42.30
8th 1000 hours	\$26.14	\$35.17	\$44.20

Drywall Finisher, Soundproofing, & Plural Component Applicator	PT-1011-DF 7/24/2007	\$31.36	\$43.00	\$54.64	H H H H H H H D N
--	-------------------------	---------	---------	---------	-------------------

Apprentice Rates:

1st 1,000 hours	\$22.05	\$29.04	\$36.02
2nd 1,000 hours	\$23.21	\$30.78	\$38.34
3rd 1,000 hours	\$24.38	\$32.53	\$40.68
4th 1,000 hours	\$25.54	\$34.27	\$43.00
5th 1,000 hours	\$26.70	\$36.01	\$45.32
6th 1,000 hours	\$27.87	\$37.76	\$47.66
7th 1,000 hours	\$29.03	\$39.50	\$49.98

Official Request #1235

Requestor: DEPT. OF NATURAL RESOURCES
Project Description: INSTALL FLOATING FISHING PIER

Project Number: LAKE FANNIE HOOE-FORT WILKINS STATE PARK
County: Keweenaw

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

	8th 1,000 hours		\$30.20	\$41.26	\$52.32	
Pipe and Manhole Rehab						
General Laborer for rehab work or normal cleaning and cctv work-top man, scaffold man, CCTV assistant, jetter-vac assistant	TM247	6/16/2009	\$26.00	\$34.90		H H H H H H H H N
Tap cutter/CCTV Tech/Grout Equipment Operator: unit driver and operator of CCTV; grouting equipment and tap cutting equipment	TM247-2	6/16/2009	\$30.50	\$41.65		H H H H H H H H N
CCTV Technician/Combo Unit Operator: unit driver and operator of cctv unit or combo unit in connection with normal cleaning and televising work	TM247-3	6/16/2009	\$29.25	\$39.77		H H H H H H H H N
Boiler Operator: unit driver and operator of steam/water heater units and all ancillary equipment associated	TM247-4	6/16/2009	\$31.00	\$42.40		H H H H H H H H N
Combo Unit driver & Jetter-Vac Operator	TM247-5	6/22/2009	\$31.00	\$42.40		H H H H H H H H N
Pipe Bursting & Slip-lining Equipment Operator	TM247-6	6/22/2009	\$32.00	\$43.90		H H H H H H H H N
Plumber & Pipefitter						
Plumber & Pipefitter 4 ten hour days may be worked only Monday-Thursday	PL-111	7/30/2009	\$47.61	\$71.42	\$95.22	H H H H H H H D Y

Apprentice Rates:

1st 6 months	\$23.96	\$35.94	\$47.92
2nd 6 months	\$25.44	\$38.16	\$50.88
3rd 6 months	\$35.32	\$52.98	\$70.64
4th 6 months	\$36.65	\$54.98	\$73.30
5th 6 months	\$37.99	\$56.98	\$75.98
6th 6 months	\$39.47	\$59.20	\$78.94
7th 6 months	\$40.80	\$61.20	\$81.60
8th 6 months	\$42.13	\$63.20	\$84.26
9th 6 months	\$43.46	\$65.19	\$86.92

Roofer

Commercial Roofer Straight time is not to exceed ten (10) hours per day or forty (40) hours per week.	RO-149-UP	8/15/2008	\$26.03	\$34.10	\$42.16	X X X X X X X D Y
--	-----------	-----------	---------	---------	---------	-------------------

Apprentice Rates:

Apprentice 1	\$18.64	\$23.50	\$28.36
Apprentice 2	\$19.47	\$24.71	\$29.95
Apprentice 3	\$20.28	\$25.91	\$31.54
Apprentice 4	\$21.09	\$27.10	\$33.10
Apprentice 5	\$21.89	\$28.26	\$34.64
Apprentice 6	\$22.70	\$29.45	\$36.21

Sheet Metal Worker

Sheet Metal Worker 4 10s allowed as consecutive days, M-Th or T-F	SHM-7-5	9/9/2009	\$47.02	\$61.86	\$76.69	H H H X D D D D Y
--	---------	----------	---------	---------	---------	-------------------

Apprentice Rates:

1st 6 months	\$25.01	\$31.68	\$38.34
2nd 6 months	\$27.34	\$34.77	\$42.21
3rd 6 months	\$28.79	\$36.95	\$45.11
4th 6 months	\$30.67	\$39.58	\$48.48
5th 6 months	\$32.54	\$42.20	\$51.84
6th 6 months	\$34.43	\$44.82	\$55.20
7th 6 months	\$36.31	\$47.45	\$58.57
8th 6 months	\$38.20	\$50.08	\$61.94

Official Request #1235
 Requestor: DEPT. OF NATURAL RESOURCES
 Project Description: INSTALL FLOATING FISHING PIER
 Project Number: LAKE FANNIE HOOE-FORT WILKINS STATE PARK
 County: Keweenaw

Official Rate Schedule
 Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Sprinkler Fitter

Sprinkler Fitter SP 669 9/17/2009 \$46.51 \$61.99 \$77.47 H H H H H H H D Y

Apprentice Rates:

Class 1 & 2	\$23.44	\$31.31	\$39.17
Class 3	\$29.35	\$37.75	\$46.15
Class 4	\$30.93	\$40.12	\$49.31
Class 5	\$35.50	\$45.47	\$55.45
Class 6	\$37.07	\$47.83	\$58.59
Class 7	\$38.65	\$50.20	\$61.75
Class 8	\$40.22	\$52.55	\$64.89
Class 9	\$41.79	\$54.91	\$68.03
Class 10	\$43.36	\$57.27	\$71.17

Truck Driver

of all trucks of 8 cubic yd capacity or over TM-RB2 9/17/2009 \$36.84 \$36.44 H H H H H H H Y

of all trucks of 8 cubic yard capacity or less TM-RB2A 9/17/2009 \$36.74 \$36.29 H H H H H H H Y

on euclid type equipment TM-RB2B 9/17/2009 \$36.99 \$36.66 H H H H H H H Y

Underground Laborer Open Cut, Class I

Construction Laborer LAUC-Z5-1 9/10/2009 \$29.42 \$38.65 \$47.87 H H H H H H H D Y

Apprentice Rates:

0-1,000 work hours	\$25.23	\$32.36	\$39.49
1,001-2,000 work hours	\$26.07	\$33.62	\$41.17
2,001-3,000 work hours	\$26.91	\$34.88	\$42.85
3,001-4,000 work hours	\$28.58	\$37.38	\$46.19

Underground Laborer Open Cut, Class II

Mortar and material mixer, concrete form man, signal LAUC-Z5-2 9/10/2009 \$29.56 \$38.86 \$48.15 H H H H H H H D Y

man, well point man, manhole, headwall and catch basin builder, guard rail builders, headwall, seawall, breakwall, dock builder and fence erector.

Apprentice Rates:

0-1,000 work hours	\$25.34	\$32.52	\$39.71
1,001-2,000 work hours	\$26.18	\$33.78	\$41.39
2,001-3,000 work hours	\$27.03	\$35.06	\$43.09
3,001-4,000 work hours	\$28.72	\$37.60	\$46.47

Underground Laborer Open Cut, Class III

Air, gasoline and electric tool operator, vibrator operator, LAUC-Z5-3 9/10/2009 \$29.69 \$39.05 \$48.41 H H H H H H H D Y

drillers, pump man, tar kettle operator, bracers, rodder, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars, etc.), cement finisher, welder, pipe jacking and boring man, wagon drill and air track operator and concrete saw operator (under 40 h.p.), windlass and tugger man, and directional boring man.

Apprentice Rates:

0-1,000 work hours	\$25.43	\$32.66	\$39.89
1,001-2,000 work hours	\$26.29	\$33.95	\$41.61
2,001-3,000 work hours	\$27.14	\$35.22	\$43.31
3,001-4,000 work hours	\$28.84	\$37.78	\$46.71

Underground Laborer Open Cut, Class IV

Trench or excavating grade man. LAUC-Z5-4 9/10/2009 \$29.74 \$39.13 \$48.51 H H H H H H H D Y

Apprentice Rates:

0-1,000 work hours	\$25.47	\$32.72	\$39.97
1,001-2,000 work hours	\$26.33	\$34.01	\$41.69
2,001-3,000 work hours	\$27.18	\$35.28	\$43.39
3,001-4,000 work hours	\$28.89	\$37.85	\$46.81

Official Request #1235

Requestor: DEPT. OF NATURAL RESOURCES
Project Description: INSTALL FLOATING FISHING PIER

Project Number: LAKE FANNIE HOOE-FORT WILKINS STATE PARK
County: Keweenaw

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Underground Laborer Open Cut, Class V

Pipe Layer

LAUC-Z5-5

9/10/2009

\$29.79 \$39.20 \$48.61 H H H H H H H D Y

Apprentice Rates:

0-1,000 work hours	\$25.51	\$32.78	\$40.05
1,001-2,000 work hours	\$26.37	\$34.07	\$41.77
2,001-3,000 work hours	\$27.22	\$35.34	\$43.47
3,001-4,000 work hours	\$28.93	\$37.91	\$46.89

Underground Laborer Open Cut, Class VI

Grouting man, top man assistant, audio visual television operations and all other operations in connection with closed circuit television inspection, pipe cleaning and pipe relining work & the installation and repair of water service pipe and appurtenances.

LAUC-Z5-6

9/10/2009

\$27.17 \$35.27 \$43.37 H H H H H H H D Y

Apprentice Rates:

0-1,000 work hours	\$23.55	\$29.84	\$36.13
1,001-2,000 work hours	\$24.27	\$30.92	\$37.57
2,001-3,000 work hours	\$24.99	\$32.00	\$39.01
3,001-4,000 work hours	\$26.44	\$34.18	\$41.91

Underground Laborer Open Cut, Class VII

Restoration laborer, seeding, sodding, planting, cutting, mulching and topsoil grading and the restoration of property such as replacing mail boxes, wood chips, planter boxes, flagstones etc.

LAUC-Z5-7

9/10/2009

\$25.28 \$32.44 \$39.59 H H H H H H H D Y

Apprentice Rates:

0-1,000 work hours	\$22.13	\$27.71	\$33.29
1,001-2,000 work hours	\$22.76	\$28.66	\$34.55
2,001-3,000 work hours	\$23.39	\$29.60	\$35.81
3,001-4,000 work hours	\$24.65	\$31.49	\$38.33

Official Request #1235

Requestor: DEPT. OF NATURAL RESOURCES

Project Description: INSTALL FLOATING FISHING PIER

Project Number: LAKE FANNIE HOOE-FORT WILKINS STATE PARK

County: Keweenaw

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

ENGINEERS - CLASSES OF EQUIPMENT LIST

UNDERGROUND ENGINEERS

CLASS I

Backfiller Tamper, Backhoe, Batch Plant Operator, Clam-Shell, Concrete Paver (2 drums or larger), Conveyor Loader (Euclid type), Crane (crawler, truck type or pile driving), Dozer, Dragline, Elevating Grader, End Loader, Gradall (and similar type machine), Grader, Power Shovel, Roller (asphalt), Scraper (self propelled or tractor drawn), Side Broom Tractor (type D-4 or larger), Slope Paver, Trencher (over 8' digging capacity), Well Drilling Rig, Mechanic, Slip Form Paver, Hydro Excavator.

CLASS II

Boom Truck (power swing type boom), Crusher, Hoist, Pump (1 or more 6" discharge or larger gas or diesel powered by generator of 300 amps or more, inclusive of generator), Side Boom Tractor (smaller than type D-4 or equivalent), Tractor (pneu-tired, other than backhoe or front end loader), Trencher (8' digging capacity and smaller), Vac Truck.

CLASS III

Air Compressors (600 cfm or larger), Air Compressors (2 or more less than 600 cfm), Boom Truck (non-swinging, non-powered type boom), Concrete Breaker (self-propelled or truck mounted, includes compressor), Concrete Paver (1 drum, ½ yard or larger), Elevator (other than passenger), Maintenance Man, Mechanic Helper, Pump (2 or more 4" up to 6" discharge, gas or diesel powered, excluding submersible pump), Pumpcrete Machine (and similar equipment), Wagon Drill Machine, Welding Machine or Generator (2 or more 300 amp or larger, gas or diesel powered).

CLASS IV

Boiler, Concrete Saw (40HP or over), Curing Machine (self-propelled), Farm Tractor (w/attachment), Finishing Machine (concrete), Firemen, Hydraulic Pipe Pushing Machine, Mulching Equipment, Oiler (2 or more up to 4", exclude submersible), Pumps (2 or more up to 4" discharge if used 3 hrs or more a day-gas or diesel powered, excluding submersible pumps), Roller (other than asphalt), Stump Remover, Vibrating Compaction Equipment (6' wide or over), Trencher (service) Sweeper (Wayne type and similar equipment), Water Wagon, Extend-a-Boom Forklift.

HAZARDOUS WASTE ABATEMENT ENGINEERS

CLASS I

Backhoe, Batch Plant Operator, Clamshell, Concrete Breaker when attached to hoe, Concrete Cleaning Decontamination Machine Operator, Concrete Pump, Concrete Paver, Crusher, Dozer, Elevating Grader, Endloader, Farm Tractor (90 h.p. and higher), Gradall, Grader, Heavy Equipment Robotics Operator, Hydro Excavator, Loader, Pug Mill, Pumpcrete Machines, Pump Trucks, Roller, Scraper (self-propelled or tractor drawn), Side Boom Tractor, Slip Form Paver, Slope Paver, Trencher, Ultra High Pressure Waterjet Cutting Tool System Operator, Vactors, Vacuum Blasting Machine Operator, Vertical Lifting Hoist, Vibrating Compaction Equipment (self-propelled), and Well Drilling Rig.

CLASS II

Air Compressor, Concrete Breaker when not attached to hoe, Elevator, End Dumps, Equipment Decontamination Operator, Farm Tractor (less than 90 h.p.), Forklift, Generator, Heater, Mulcher, Pigs (Portable Reagent Storage Tanks), Power Screens, Pumps (water), Stationary Compressed Air Plant, Sweeper, Water Wagon and Welding Machine.

Michigan Department Energy, Labor & Economic Growth
Wage & Hour Division
Overtime Provisions for MICHIGAN PREVAILING WAGE RATE
COMMERCIAL SCHEDULE

1. Overtime is represented as a nine character code. Each character represents a certain period of time after the first 8 hours Monday thru Friday.

	Monday thru Friday	Saturday	Sunday & Holidays
First 8 Hours		4	8
9th Hour	1	5	
10th Hour	2	6	
Over 10 hours	3	7	

Overtime for Monday thru Friday after 8 hours:

the 1st character is for time worked in the 9th hour (*8.1 - 9 hours*)

the 2nd character is for time worked in the 10th hour (*9.1 - 10 hours*)

the 3rd character is for time worked beyond the 10th hour (*10.1 and beyond*)

Overtime on Saturday:

the 4th character is for time worked in the first 8 hours on Saturday (*0 - 8 hours*)

the 5th character is for time worked in the 9th hour on Saturday (*8.1 - 9 hours*)

the 6th character is for time worked in the 10th hour (*9.1 - 10 hours*)

the 7th character is for time worked beyond the 10th hour (*10.01 and beyond*)

Overtime on Sundays & Holidays

The 8th character is for time worked on Sunday or on a holiday

Four Ten Hour Days

The last character indicates if an optional 4-day 10-hour per day workweek can be worked.

2. Overtime Indicators Used in the Overtime Provision:

H - means TIME AND ONE-HALF due

X - means TIME AND ONE-HALF due after 40 HOURS worked

D - means DOUBLE PAY due

Y - means YES. An optional 4-day 10-hour per day workweek can be worked without paying overtime after 8 hours worked.

N - means NO. An optional 4-day 10-hour per day workweek *can not* be worked without paying overtime after 8 hours worked.

3. EXAMPLES:

HHHHHHHDN - This example shows that the 1½ rate must be used for time worked after 8 hours Monday thru Friday (*characters 1 - 3*); for all hours worked on Saturday, 1½ rate is due (*characters 4 - 7*). Work done on Sundays or holidays must be paid double time (*character 8*). The N (*character 9*) indicates that 4 ten-hour days is not an acceptable workweek at regular pay.

XXXHHHHHDY - This example shows that the 1½ rate must be used for time worked after 40 hours are worked Monday thru Friday (*characters 1-3*); for hours worked on Saturday, 1½ rate is due (*characters 4 - 7*). Work done on Sundays or holidays must be paid double time (*character 8*). The Y (*character 9*) indicates that 4 ten-hour days is an acceptable alternative workweek.



Michigan Department of Energy, Labor & Economic Growth

Wage & Hour Division

PO Box 30476

Lansing , MI 48909-7976

517.335.0400

www.michigan.gov/wagehour



JENNIFER M. GRANHOLM GOVERNOR

STANLEY "SKIP" PRUSS DIRECTOR

Informational Sheet: Prevailing Wages on State Projects
General Information Regarding Fringe Benefits

Certain fringe benefits may be credited toward the payment of the Prevailing Wage Rate:

- If a fringe benefit is paid directly to a construction mechanic
If a fringe benefit contribution or payment is made on behalf of a construction mechanic
If a fringe benefit, which may be provided to a construction mechanic, is pursuant to a written contract or policy
If a fringe benefit is paid into a fund, for a construction mechanic

When a fringe benefit is not paid by an hourly rate, the hourly credit will be calculated based on the annual value of the fringe benefit divided by 2080 hours per year (52 weeks @ 40 hours per week).

The following is an example of the types of fringe benefits allowed and how an hourly credit is calculated:

Table with 3 columns: Benefit Type, Calculation, and Hourly Credit. Rows include Vacation, Dental insurance, Vision insurance, Health insurance, Life insurance, Tuition, Bonus, 401k Employer Contribution, and Total Hourly Credit.

Other examples of the types of fringe benefits allowed:

- Sick pay
Holiday pay
Accidental Death & Dismemberment insurance premiums

The following are examples of items that will not be credited toward the payment of the Prevailing Wage Rate

- Legally required payments, such as:
Unemployment Insurance payments
Workers' Compensation Insurance payments
FICA (Social Security contributions, Medicare contributions)
Reimbursable expenses, such as:
Clothing allowance or reimbursement
Uniform allowance or reimbursement
Gas allowance or reimbursement
Travel time or payment
Meals or lodging allowance or reimbursement
Per diem allowance or payment
Other payments to or on behalf of a construction mechanic that are not wages or fringe benefits, such as:
Industry advancement funds
Financial or material loans

APPENDIX II

DEPARTMENT OF NATURAL RESOURCES

SPECIAL PROJECT PROCEDURES

The Work comprising this Project will be performed at a site of the Department of Natural Resources. The Contractor must comply with all rules and regulations pertaining to such sites and must conform to the following rules:

1. The Contractor must provide a competent Superintendent satisfactory to the Department of Natural Resources on the work site at all times during working hours with full authority to act for him. It must be the Contractor's responsibility to furnish the Department of Natural Resources with the name, address and telephone number of the responsible person to contact for Emergency during after hour, weekend and holiday periods.
2. Access to and egress from the site must be via routes specifically designated by the Department of Natural Resources authorized representative.
3. Areas on the site for employee parking, tool boxes, material lay down, etc., must be assigned by the Department of Natural Resources. All firearms, weapons, alcoholic beverages, or explosives must be removed from vehicles before entering the site.
4. Heavy equipment such as bulldozers and power shovels must be locked or immobilized in an acceptable manner when not in use. No tools, small pipe, copper or wire must remain on the site overnight, unless acceptably locked inside shanties or tool chests. There will be no exchange, loaning or borrowing of tools, equipment or manpower between the Department of Natural Resources and the Contractor.
5. The Contractor must comply with the special condition requirements of the Department of Natural Resources and the United States Army Corps of Engineers Permit Sections appended to these specifications.



APPENDIX III

DEPARTMENT OF MANAGEMENT AND BUDGET Facilities Administration

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that, within the past three (3) years, the vendor, an officer of the vendor, or an owner of a 25% or greater interest in the vendor:

- (a) Has not been convicted of a criminal offense incident to the application for or performance of a contract or subcontract with the State of Michigan or any of its agencies, authorities, boards, commissions, or departments.
- (b) Has not been convicted of a criminal offense which negatively reflects on the vendor's business integrity, including but not limited to, embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, negligent misrepresentation, price-fixing, bid-rigging, or a violation of state or federal anti-trust statutes.
- (c) Has not had a loss or suspension of a license or the right to do business or practice a profession, the loss or suspension of which indicates dishonesty, a lack of integrity, or a failure or refusal to perform in accordance with the ethical standards of the business or profession in question.
- (d) Has not been convicted of a criminal offense or other violation of other state or federal law, as determined by a court of competent jurisdiction or an administrative proceeding, which in the opinion of DMB indicates that the vendor is unable to perform responsibly or which reflects a lack of integrity that could negatively impact or reflect upon the State of Michigan, including but not limited to, any of the following offenses under or violations of:
 - i. The Natural Resources and Environmental Protection Act, 1994 PA 451, MCL 324.101 to 324.90106.
 - ii. A persistent and knowing violation of the Michigan Consumer Protection Act, 1976 PA 331, MCL 445.901 to 445.922.
 - iii. 1965 PA 166, MCL 408.551 to 408.558 (law relating to prevailing wages on state projects) and a finding that the vendor failed to pay the wages and/or fringe benefits due within the time period required.
 - iv. Repeated or flagrant violations of 1978 PA 390 MCL 408.471 to 408.490 (law relating to payment of wages and fringe benefits).
 - v. A willful or persistent violation of the Michigan Occupational Health and Safety Act, 1974, PA 154, MCL 408.10001 to 408.1094, including: a criminal conviction, repeated willful violations that are final orders, repeated violations that are final orders, and failure to abate notices that are final orders.
 - vi. A violation of federal or state civil rights, equal rights, or non-discrimination laws, rules, or regulations.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award and may be grounds for debarment.

Typed Name & Title of Authorized Representative

Signature of Authorized Representative

Date

I am unable to certify to the above statements. My explanation is attached.



**DEPARTMENT OF MANAGEMENT AND BUDGET
Facilities Administration**

**PROFESSIONAL/CONTRACTOR DEMOGRAPHICS,
STATISTICS AND CERTIFICATION**

1. Company Name: _____
2. Company Address: _____

3. Principle Place of Business (zip code): _____
4. Year of Establishment _____

**Woman, Minority, or Veteran Owned Small
Business Representation**
(For Statistical Use Only)

DEFINITIONS:

‘Woman-owned business,’ means a small business that is at least 51% owned by a woman or women who are US citizens and who control and operate the business.

The vendor represents that it IS _____, IS NOT _____ a woman-owned small business.

‘Minority-owned business,’ means a small business that is at least 51% owned by a minority or minorities who are US citizens and who control and operate the business.

The vendor represents that it IS _____, IS NOT _____ a minority-owned small business.

African American _____ Arab American _____ Asian American _____ Hispanic _____
American Indian _____ Eskimo _____

‘Qualified Disabled Veteran,’ means a business entity that is 51% or more owned by one or more veterans with a service-connected disability.

‘Qualified Disabled,’ means a business entity that is 51% or more owned by one or more with a service-connected disability.

The vendor represents that it IS _____, IS NOT _____ qualified disabled.

‘Veteran-owned business,’ means a small business that is at least 51% owned by a veteran or veterans who are U.S. citizens and who control and operate the business.

The vendor represents that it IS _____, IS NOT _____ a veteran-owned small business.

The contractor represents and warrants that the company meets the above (when checked) and can provide supportive documentation upon request.

Authorized Agent Name (print or type)

Authorized Agent Signature

Fraudulent Certification as a Qualified Disabled Veteran is subject to debarment under MCL 18.264.

Certification of a Michigan Based Business
(Information Required Prior to Contract Award for Application
of State Preference/Reciprocity Provisions)

DEFINITION: To qualify as a Michigan business, vendor must have during the 12 months immediately preceding this bid deadline, or if the business is newly established, for the period the business has been in existence, it has (check all that apply):

Bidder shall also indicate one of the following:

Bidder qualifies as a Michigan business (provide zip code: _____)

- () Filed a Michigan single business tax return showing a portion or all of the income tax base allocated or apportioned to the State of Michigan pursuant to the Michigan Single Business Tax Act, 1975 PA 228, MCL § 208.1 – 208.145; or
- () Filed a Michigan income tax return showing income generated in or attributed to the State of Michigan; or
- () Withheld Michigan income tax from compensation paid to the bidder's owners and remitted the tax to the Department of Treasury; or

I certify that **I have personal knowledge** of such filing or withholding, that it was more than a nominal filing for the purpose of gaining the status of a Michigan business, and that it indicates a significant business presence in the state, considering the size of the business and the nature of its activities.

I authorize the Michigan Department of Treasury to verify that the business has or has not met the criteria for a Michigan business indicated above and to disclose the verifying information to the procuring agency.

Bidder does not qualify as a Michigan business (provide name of State: _____).

Principal place of business is outside the State of Michigan, however service/commodity provided by a location within the State of Michigan (provide zip code: _____).

Authorized Agent Name (print or type)

Authorized Agent Signature

Fraudulent Certification as a Michigan business is prohibited by MCL 18.1268 § 268. A BUSINESS THAT PURPOSELY OR WILLFULLY SUBMITS A FALSE CERTIFICATION THAT IT IS A MICHIGAN BUSINESS OR FALSELY INDICATES THE STATE IN WHICH IT HAS ITS PRINCIPLE PLACE OF BUSINESS IS GUILTY OF A FELONY, PUNISHABLE BY A FINE OF NOT LESS THAN \$25,000 and subject to debarment under MCL 18.264.

PREFERENCE CERTIFICATION
FAILURE TO COMPLETE AND RETURN THIS FORM MAY DISQUALIFY THE BID

AUTHORITY: To comply with Michigan Public Act 237 of 1988, a Bidder submitting a Bid of \$100,000 or more must complete Section A OR B below.

SECTION A

<p>I certify that _____ qualifies as a Michigan business for the purpose of claiming a reciprocal preference against out-of-state firms. During the 12 months immediately preceding this Bid deadline or, if the business is newly established, for the period the business has been in existence, the business has (check all which apply):</p>		
<input type="checkbox"/>	<p>Filed a Michigan single business tax return showing a portion or all of the income tax base allocated or apportioned to the State of Michigan pursuant to the Michigan Single Business Tax Act, Act No. 228 of the Public Acts of 1975, being Sections 208.1 to 208.145 of the Michigan Compiled Laws.</p>	
<input type="checkbox"/>	<p>Filed a Michigan income tax return showing income generated in or attributed to the State of Michigan.</p>	
<input type="checkbox"/>	<p>Withheld Michigan income tax from compensation paid to the Bidder's owners and remitted the tax to the Department of Treasury.</p>	
<p>I certify that I have personal knowledge of such filing or withholding, that it was more than a nominal filing for the purpose of gaining the status of a Michigan business, and that it indicates a significant business presence in the state, considering the size of the business and the nature of its activities.</p> <p>I authorize the Michigan Department of Treasury to verify whether the business has met the criteria for a Michigan business indicated above and to disclose the verifying information to the procuring agency.</p>		
<p>Authorized Representative (type or print)</p>	<p>Authorized Representative (signature)</p>	<p>Date</p>

(OR)

SECTION B

<p>I certify that _____ maintains its principal place of business in the State of _____.</p>		
<p>Authorized Representative (type or print)</p>	<p>Authorized Representative (signature)</p>	<p>Date</p>

A BUSINESS THAT PURPOSELY OR WILLFULLY SUBMITS A FALSE CERTIFICATION THAT IT IS A MICHIGAN BUSINESS OR FALSELY INDICATES THE STATE IN WHICH IT HAS ITS PRINCIPAL PLACE OF BUSINESS IS GUILTY OF A FELONY, PUNISHABLE BY A FINE OF NOT LESS THAN \$25,000.

PERMIT**ISSUED TO:**

MDNR Office of Land & Facilities
 Attn: Bruce Watkins
 PO Box 30033
 Lansing, MI 48909

Permit No.	09-42-0014-P
Issued	October 26, 2009
Extended	
Revised	
Expires	October 26, 2014

This permit is being issued by the Michigan Department of Environmental Quality (MDEQ) under the provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) and specifically:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Part 301 Inland Lakes and Streams | <input type="checkbox"/> Part 315 Dam Safety |
| <input type="checkbox"/> Part 325 Great Lakes Submerged Lands | <input type="checkbox"/> Part 323 Shorelands Protection and Management |
| <input type="checkbox"/> Part 303 Wetlands Protection | <input type="checkbox"/> Part 353 Sand Dune Protection and Management |
| <input type="checkbox"/> Part 31 Floodplain/Water Resources Protection | |

Permission is hereby granted, based on permittee assurance of adherence to State requirements and permit conditions to:

Permitted Activity:

Dredge and install a new floating fishing dock, along with fish shelters at the public launch on Lake Fanny Hooe. The purpose of the project is to provide ADA fishing access to the lake for non-boating public. The new pier will consist of a 6-foot by 9-foot concrete abutment; a 25-foot long by 6-foot wide aluminum gangway with railing; and a 13-foot long by 8-foot wide floating pier, with a 10-foot long by 48-foot wide "T". The pier will have hand railing and chain link fencing and will be supported by concrete and helical screw anchors.

Approximately 17 cubic yards of riprap will be placed along the shoreline below the abutment and gangway. An additional 6 cubic yards of material will be required for the abutment. A 300 square foot triangular shaped area below the gangway and abutment will be dredged up to 2.9-foot deep for a total dredge quantity of 42 cubic yards of which 39.5 will be below the ordinary high water mark. Maintenance dredging of up to 40 cubic yards annually is authorized. Dredge spoils will be placed on site in uplands areas. Additionally, approximately 50 fish habitat brush shelters, 4-foot by 5-foot by 2-foot, will be placed in an area up to 30-feet from the main pier. All work shall be completed in accordance with the terms and conditions of this permit and the plans on file with Land and Water Management Division.

Water Course Affected: Lake Fanny Hooe

Property Location: Keweenaw County, Grant Township, Section 33

Subdivision, Lot Town/Range 59N, 28W Property Tax No.

Authority granted by this permit is subject to the following limitations:

- Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.
- The permittee in exercising the authority granted by this permit shall not cause unlawful pollution as defined by Part 31, Floodplain/Water Resources Protection of the NREPA.
- This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.
- All work shall be completed in accordance with the plans and the specifications submitted with the application and/or plans and specifications attached hereto.
- No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved herein.
- It is made a requirement of this permit that the permittee give notice to public utilities in accordance with Act 53 of the Public Act of 1974 and comply with each of the requirements of that act.

10/27/2009 07:48 FAX 9068753336

002

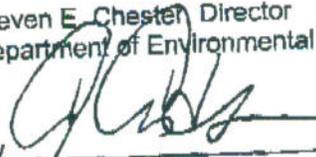
- G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits or complying with other state statutes.
- H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights.
- I. Permittee shall notify the MDEQ within one week after the completion of the activity authorized by this permit, by completing and forwarding the attached, preaddressed post card to the office addressed thereon.
- J. This permit shall not be assigned or transferred without the written approval of the MDEQ.
- K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific State Act, Federal Act and/or Rule under which this permit is granted.
- L. Work to be done under authority of this permit is further subject to the following special instructions and specifications:
1. Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA, or the need to acquire applicable permits from the County Enforcing Agent (CEA). Contact: Philippe Arond, 6415 Five Mile Point Road, Allouez, MI 49805, for further information regarding Part 91 of PA 451.
 2. All dredge/excavated spoils including organic and inorganic soils, vegetation, and other material removed shall be placed on upland (non-wetland, non-floodplain or non-bottomland), prepared for stabilization, and stabilized with sod and/or seed and mulch in such a manner to prevent and ensure against erosion of any material into any waterbody, wetland, or floodplain.
 3. The riprap shall consist of clean stone or rock (free of paint, soil or other fines, asphalt, soluble chemicals, or organic material). The riprap shall be of appropriate weight and dimension necessary to achieve the intended shore protection.
 4. All fill/backfill shall consist of clean inert material that will not cause siltation nor contain soluble chemicals, organic matter, pollutants, or contaminants. All fill shall be CONTAINED in such a manner so as not to erode into any surface water, floodplain, or wetland. All raw areas associated with the permitted activity shall be STABILIZED with sod and/or seed and mulch, riprap, or other technically effective methods as necessary to prevent erosion.
 5. Fish habitat structures shall be placed in water of adequate depth to ensure that a minimum of three (3) feet of water covers the structure. The structures shall be placed in such a manner as to prevent hazards to navigation.
 6. All raw areas resulting from the permitted construction activity shall be promptly and effectively stabilized with sod and/or seed and mulch (or other technology specified by this permit or project plans) in a sufficient quantity and manner to prevent erosion and any potential siltation to surface waters or wetlands.
 7. In issuing this permit, the MDEQ has relied upon the information and data which permittee has provided in connection with the permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete, or inaccurate, the MDEQ may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
 8. If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity and/or mitigation plan from the MDEQ. Such revision requests shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by the MDEQ prior to being implemented.
 9. This permit may be transferred to another person upon written approval of the MDEQ. The permittee must submit a written request to the MDEQ to transfer the permit to the new owner. The new owner must also submit a written request to accept transfer of the permit. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties which includes all the above information may be provided to the MDEQ. The MDEQ will review the request and if approved, will provide written notification to the new owner.

Permit No. 09-42-0014-P

MDNR Office of Land & Facilities

10. This permit is being issued for the maximum time allowed under Part 301, Inland Lakes and Streams, of the Natural Resources and Environmental Protection Act, PA 451 of 1994, as amended, including all permit extensions allowed under the administrative rule R 281.813. Therefore, no extensions of this permit will be granted. Initiation of the construction work authorized by this permit indicates the permittee's acceptance of this condition. The permit, when signed by the MDEQ, will be for a five-year period beginning at the date of issuance.
11. All work shall be completed in accordance with the terms and conditions of this permit and the plans on file with Land and Water Management Division.
12. Your attention is directed to Item 1 above, regarding notification of project completion.

Steven E. Chester Director
Department of Environmental Quality

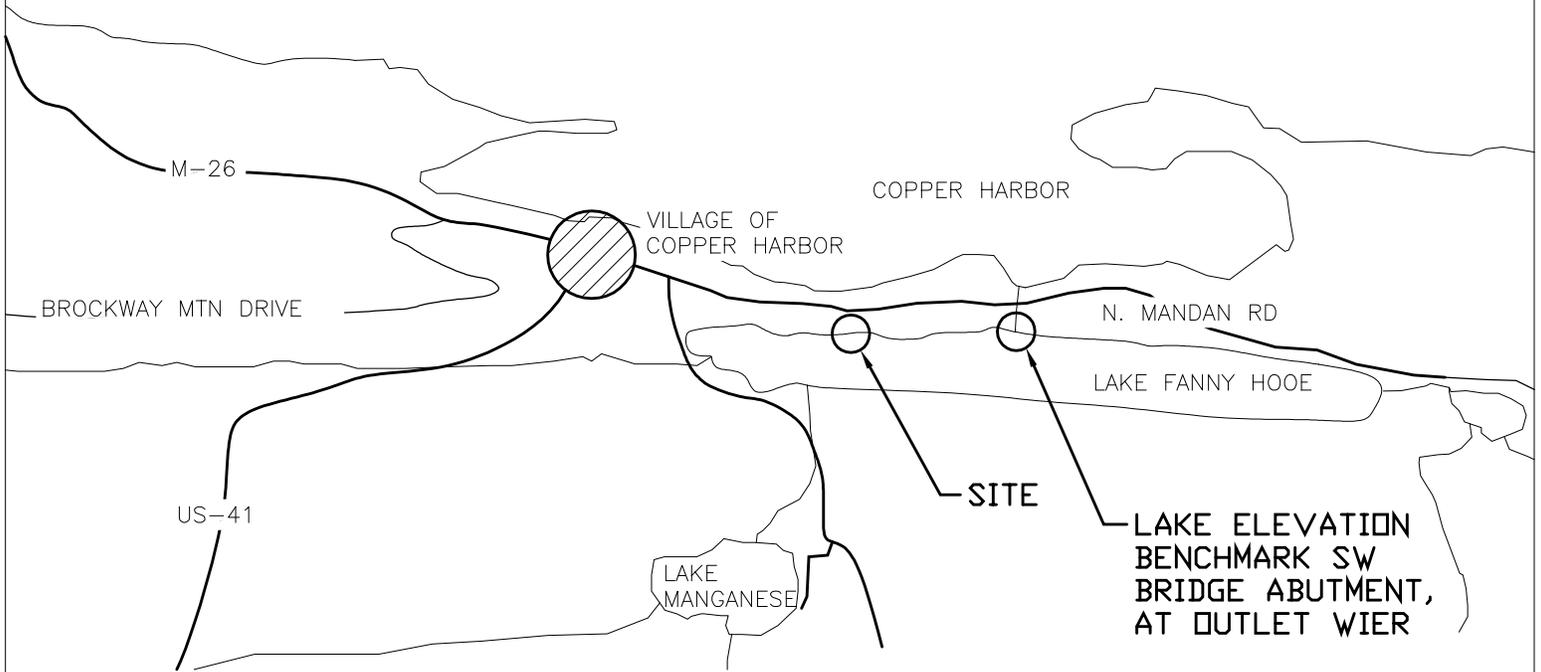
By 
Cathy Gustafson
District Representative
Land and Water Management Division

cc: Keweenaw CEA
Grant Township
MDNR, Fort Wilkins State Park
MDNR, Parks & Recreation, Marquette

PROJECT LOCATION
 FT WILKINS STATE PARK
 MDNR PROJECT NO. 24-3207



LAKE SUPERIOR



**PROPOSED FLOATING
 FISHING PIER - 24-3207**
 MICHIGAN DEPT. OF NATURAL RESOURCES
 OFFICE OF LAND & FACILITIES - DESIGN UNIT
 FT WILKINS STATE PARK
 LAKE FANNY HOOE

TWP. OF _____ GRANT
 COUNTY OF _____ KEWEENAW
 T58N R28W SEC.33
 INDEX 51220 PCA 65900 AY 08
 PROJECT/PHASE 291000/26
 DATE: JANUARY 6, 2009
 SH 1 OF 8

DREDGE SPOILS TO BE
DISPOSED OF AT THE STATE
PARK HEADQUARTERS
EQUIPMENT YARD AND SPREAD
OVER THE GRAVEL PARKING
AREA TO 3" THICK.

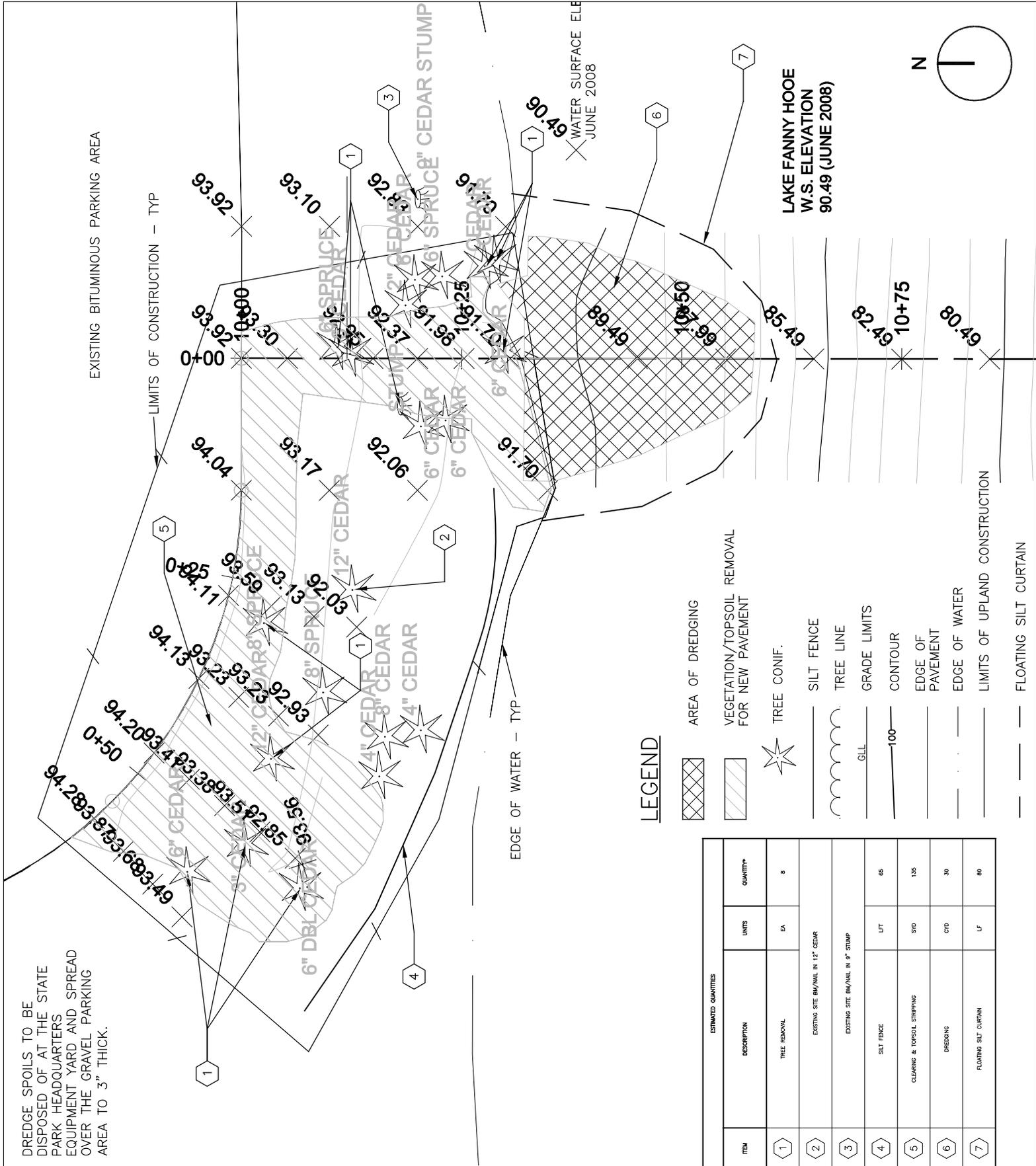
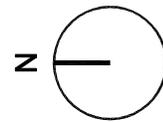
EXISTING BITUMINOUS PARKING AREA

LIMITS OF CONSTRUCTION - TYP

EDGE OF WATER - TYP

WATER SURFACE ELE
JUNE 2008

LAKE FANNY HOOE
W.S. ELEVATION
90.49 (JUNE 2008)



LEGEND

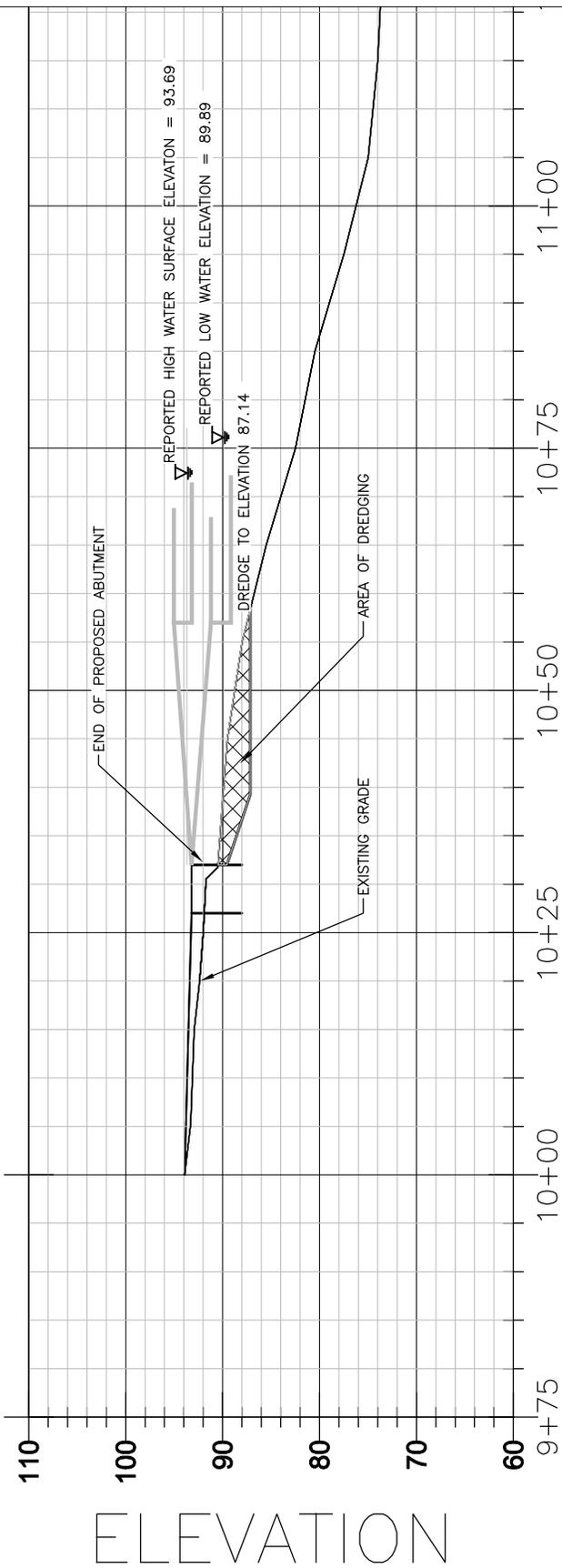
- AREA OF DREDGING
- VEGETATION/TOPSOIL REMOVAL FOR NEW PAVEMENT
- TREE CONIF.
- SILT FENCE
- TREE LINE
- GRADE LIMITS
- CONTOUR
- EDGE OF PAVEMENT
- EDGE OF WATER
- LIMITS OF UPLAND CONSTRUCTION
- FLOATING SILT CURTAIN

ITEM	DESCRIPTION	UNITS	QUANTITY
1	TREE REMOVAL	EA	8
2	EXISTING SITE BM/PIN IN 12" CEDAR		
3	EXISTING SITE BM/PIN IN 9" STUMP		
4	SILT FENCE	LF	65
5	CLEANING & TOPSOIL STRIPPING	SQ	135
6	DREDGING	CYD	30
7	FLOATING SILT CURTAIN	LF	80

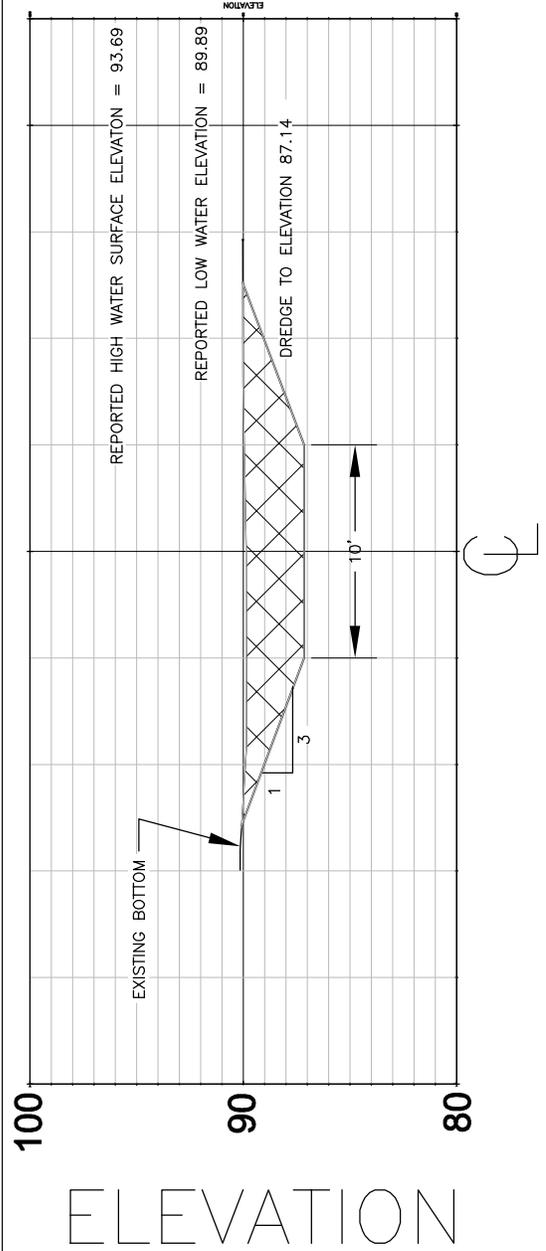
PROPOSED FLOATING FISHING PIER - 24-3207

MICHIGAN DEPT. OF NATURAL RESOURCES
OFFICE OF LAND & FACILITIES - DESIGN UNIT
FT WILKINS STATE PARK
LAKE FANNY HOOE

TWP. OF GRANT
COUNTY OF KEWEENAW
T58N R28W SEC.33
INDEX 51220 PCA 65900 AY 08
PROJECT/PHASE 291000/26
DATE: JANUARY 6, 2009
SH 2 OF 8



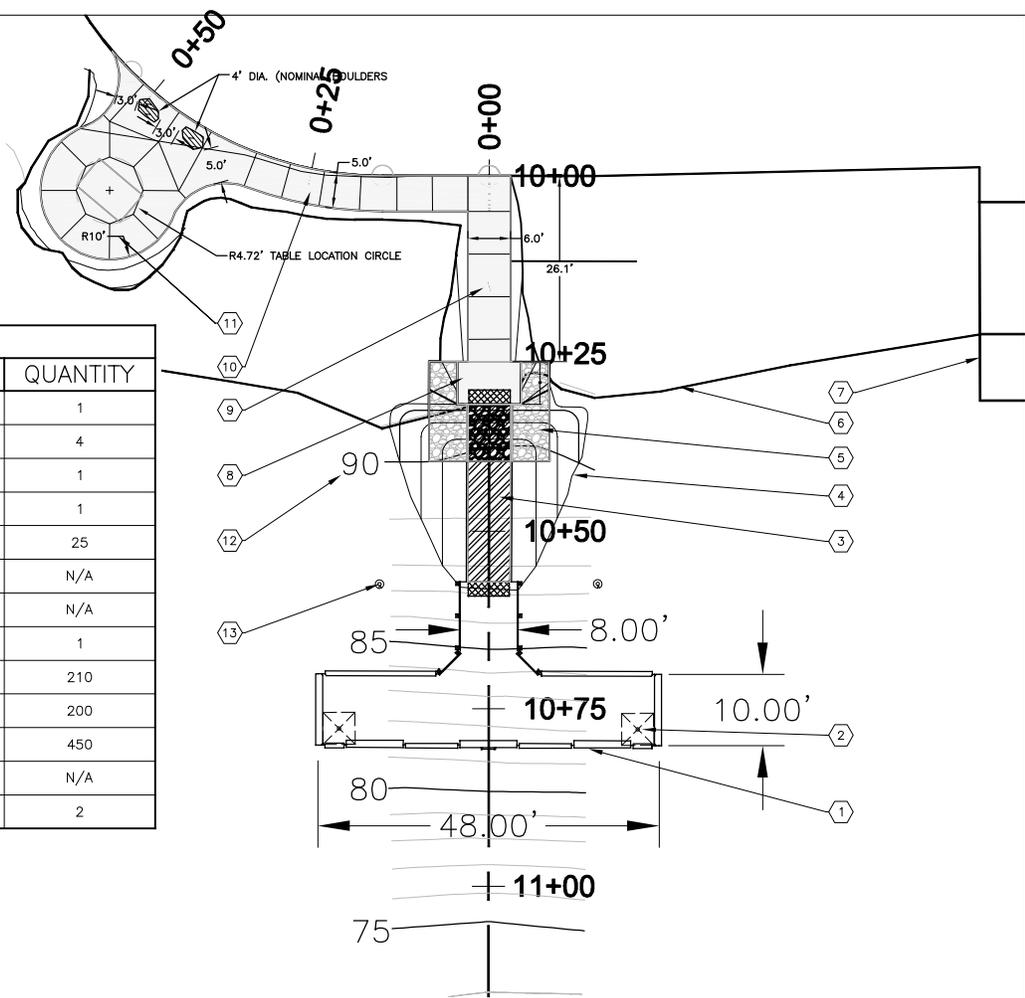
1 DREDGING PROFILE STATION



2 DREDGING SECTION @ STA 10+40

PROPOSED FLOATING
FISHING PIER - 24-3207
MICHIGAN DEPT. OF NATURAL RESOURCES
OFFICE OF LAND & FACILITIES - DESIGN UNIT
FT WILKINS STATE PARK
LAKE FANNY HOOE

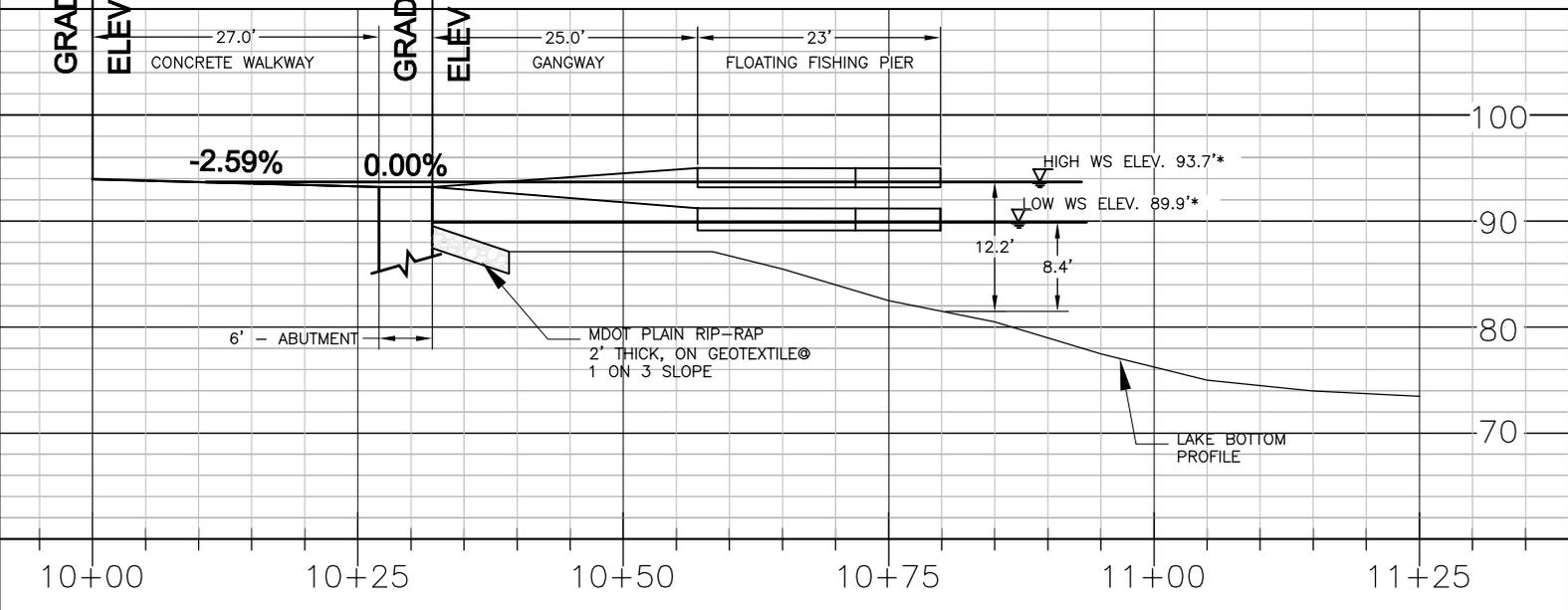
TWP. OF GRANT
COUNTY OF KEWEENAW
T58N R28W SEC.33
INDEX 51220 PCA 65900 AY 08
PROJECT/PHASE 291000/26
DATE: JANUARY 6, 2009
SH 3 OF 8



PROPOSED ELEMENTS			
ITEM	DESCRIPTION	UNITS	QUANTITY
①	FLOATING FISHING PIER	EA	1
②	CONCRETE GRAVITY ANCHORS	EA	4
③	6'X25' ALUMINUM GANGWAY	EA	1
④	LIMITS OF DREDGING	EA	1
⑤	MDOT PLAN RIP-RAP ON GEOTEXTILE	SYD	25
⑥	EDGE OF WATER	N/A	N/A
⑦	EXISTING BOAT LAUNCH RAMP	N/A	N/A
⑧	9'X6' BIN WALL ABUTMENT	EA	1
⑨	8' WIDE CONC. WALKWAY	SFT	210
⑩	5' WIDE CONC. WALKWAY	SFT	200
⑪	CONC. PAD FOR PICNIC TABLE	SFT	450
⑫	BOTTOM CONTOUR ELEVATIONS	N/A	N/A
⑬	HELICAL SCREW ANCHORS	EA	2

STATION

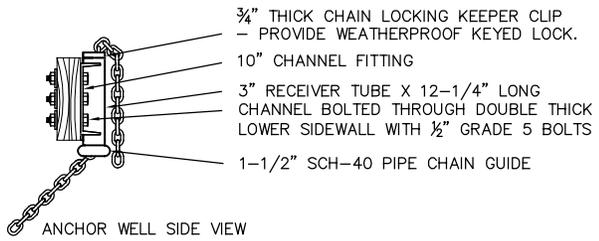
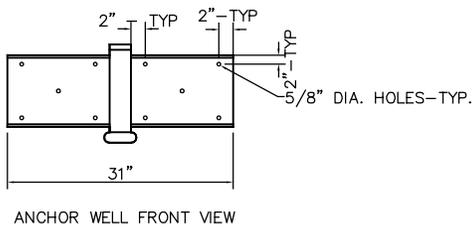
* WATER SURFACE ELEVATIONS AS REPORTED BY LOCAL STAFF



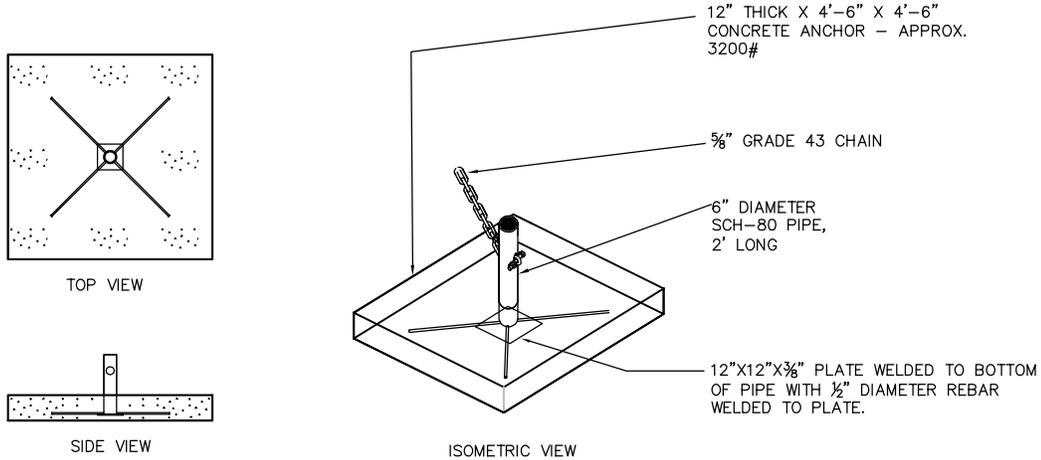
PROPOSED FLOATING FISHING PIER - 24-3207

MICHIGAN DEPT. OF NATURAL RESOURCES
 OFFICE OF LAND & FACILITIES - DESIGN UNIT
 FT WILKINS STATE PARK
 LAKE FANNY HOOE

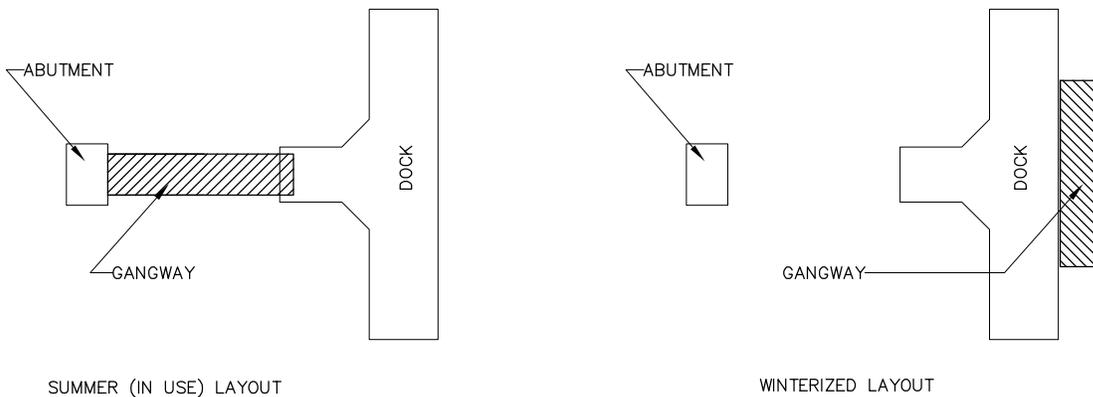
TWP. OF _____ GRANT
 COUNTY OF _____ KEWEENAW
 T58N R28W SEC.33
 INDEX 51220 PCA 65900 AY 08
 PROJECT/PHASE 291000/26
 DATE: JANUARY 6, 2009
 SH 4 OF 8



CHAIN ANCHOR WELL DETAIL
NOT TO SCALE



CONCRETE ANCHOR DETAIL

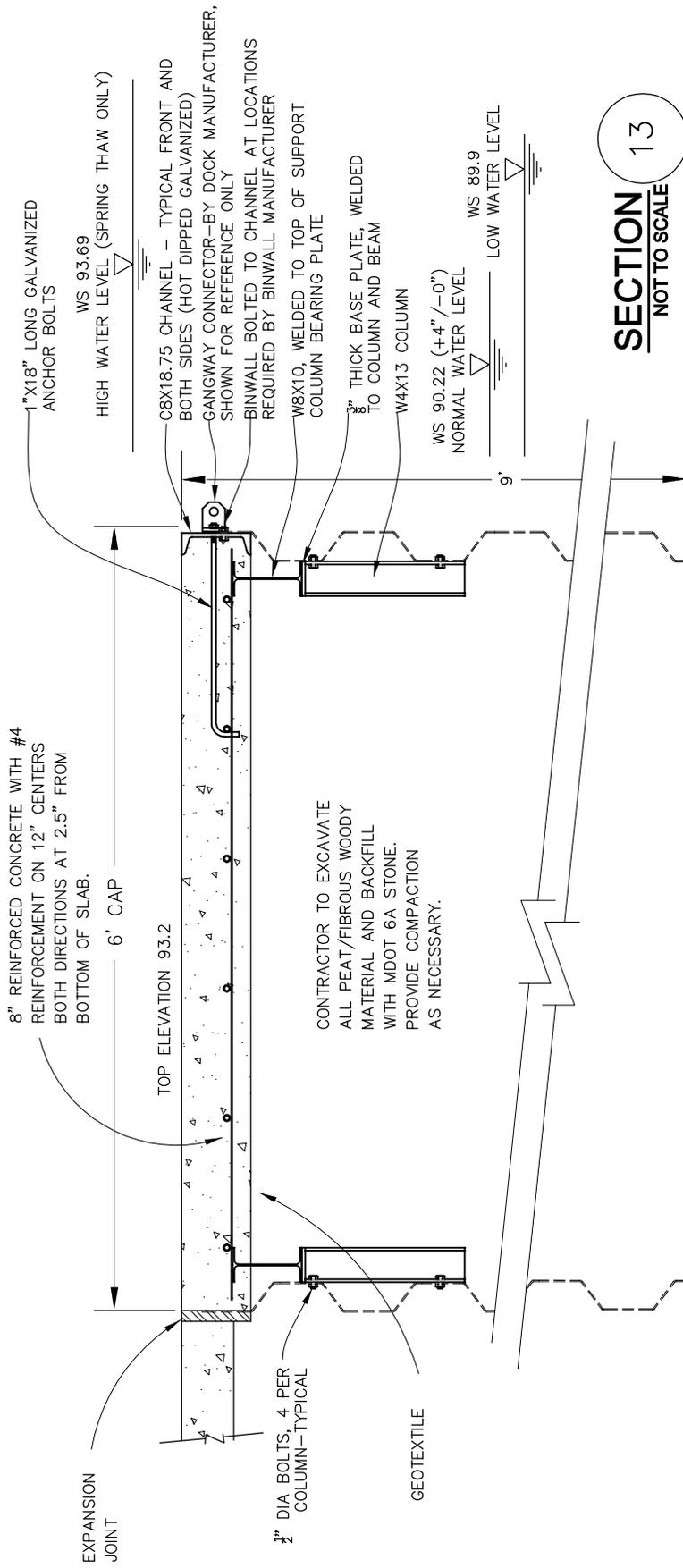


WINTERIZATION PLAN
NOT TO SCALE

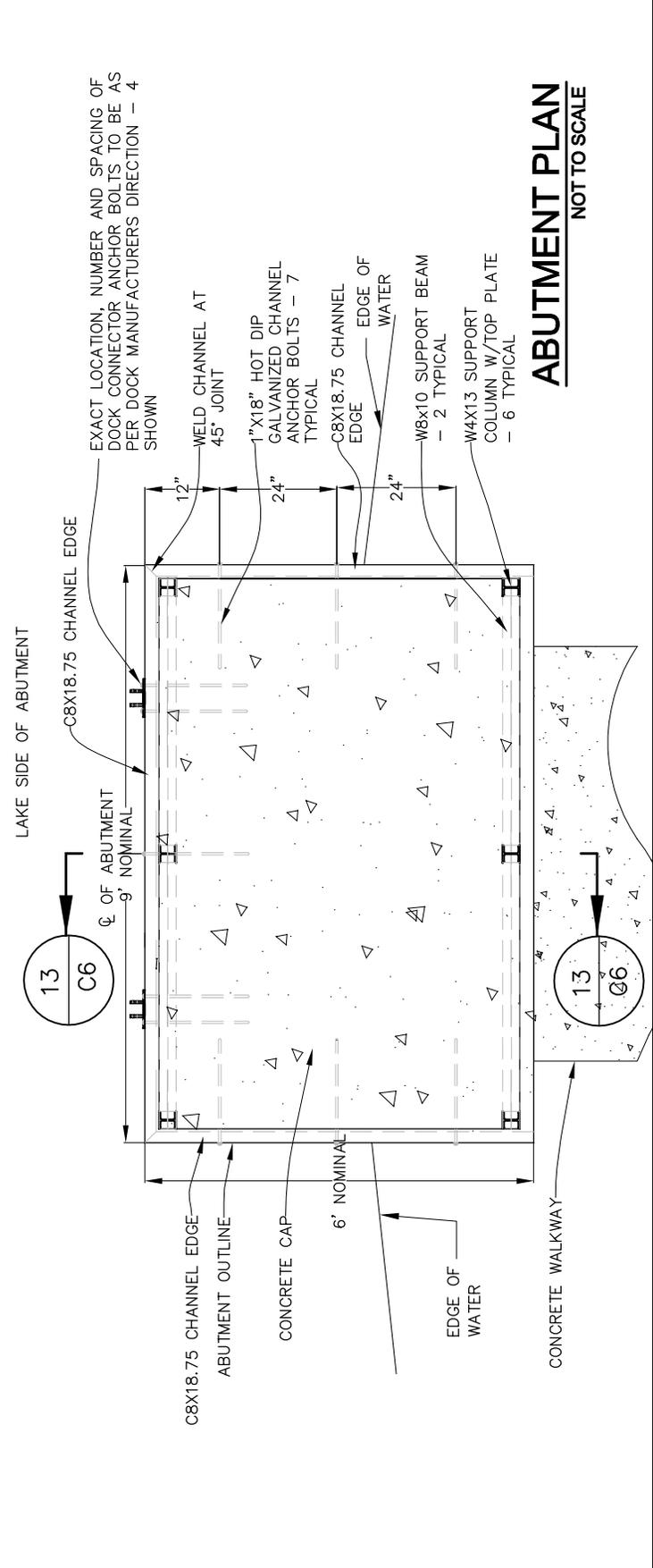
**PROPOSED FLOATING
FISHING PIER - 24-3207**

MICHIGAN DEPT. OF NATURAL RESOURCES
OFFICE OF LAND & FACILITIES - DESIGN UNIT
FT WILKINS STATE PARK
LAKE FANNY HOOE

TWP. OF _____ GRANT
COUNTY OF _____ KEWEENAW
T58N R28W SEC.33
INDEX 51220 PCA 65900 AY 08
PROJECT/PHASE 291000/26
DATE: JANUARY 6, 2009
SH 6 OF 8



SECTION 13
NOT TO SCALE



ABUTMENT PLAN
NOT TO SCALE

PROPOSED FLOATING
FISHING PIER - 24-3207
MICHIGAN DEPT. OF NATURAL RESOURCES
OFFICE OF LAND & FACILITIES - DESIGN UNIT
FT WILKINS STATE PARK
LAKE FANNY HOOE

TWP. OF _____ GRANT
COUNTY OF _____ KEWEENAW
T58N R28W SEC.33
INDEX 51220 PCA 65900 AY 08
PROJECT/PHASE 291000/26
DATE: JANUARY 6, 2009
SH 7 OF 8



CENTERLINE OF
WALKWAY AND
ABUTMENT @
APPROXIMATELY 80'
FROM THE
CLOSEST EDGE OF
THE LAUNCH RAMP

VIEW SOUTH

**PHOTO OF PROPOSED WALKWAY
AND ABUTMENT LOCATION**

PROPOSED FLOATING
FISHING PIER — 24-3207
MICHIGAN DEPT. OF NATURAL RESOURCES
OFFICE OF LAND & FACILITIES — DESIGN UNIT
FT WILKINS STATE PARK
LAKE FANNY HOOE

TWP. OF GRANT
COUNTY OF KEWEENAW
T58N R28W SEC.33
INDEX 51220 PCA 65900 AY 08
PROJECT/PHASE 291000/26
DATE: JANUARY 6, 2009
SH 8 OF 8